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March 9, 2000

VIA UPS OVERNIGHT MAIL

Gregory L. Sukys
Environmental Enforcement Section
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044

RE: Chemetco - Land Issues

Dear Greg:

In preparation for our settlement conference on March 22, 2000, please accept the following discussion and the attachments as Chemetco's contribution to an agenda for the meeting. This submittal will bring USEPA and your office up to date on activities at the site since USEPA's last site visit as well as share with USEPA Chemetco's research on long-term solutions for the slag.

We have organized the enclosed attachments to track the major issues raised by your letter to Patrick Flynn on February 14, 2000:

Zinc Oxide Remediation Area - Exhibit 1 describes the history of the technical discussions into the remediation of the zinc oxide remediation area which was the subject of the criminal case and encloses pertinent recent submittals on the technical consensus to treat the zinc oxide and arrange for off-site disposal. A legal issue to be discussed is the relationship between the civil enforcement and the pending penalty phase of the criminal case.

Stormwater - Exhibit 2 contains a chronology and description of technical improvements for containing stormwater at the facility. We have also enclosed a map for your convenience.

Wetlands - We are submitting as Exhibit 3 the technical proposal made in 1998 to address the allegations that the parking lot was built on wetlands. The thrust of our argument was that even if wetlands were taken, restoration of the area allegedly taken is impossible due to compaction and related issues and that far more beneficial wetlands can be created elsewhere on Chemetco's property. The last event on this issue was the submittal by Chemetco of a drilling plan to demonstrate compaction under the parking lot.

Bricks and Debris - Exhibit 4 contains a chronology and description of Chemetco's strategies for treating and disposing of the debris off-site.

Slag Issues - As you may be aware, current production of slag is sold as raw material for the manufacturing of shingles. Historic production has at various times been the subject of sales. While there are numerous issues raised by the allegations regarding slag, including prior characterization and statistically relevant sampling protocols, Chemetco proposes to focus on two issues at the March 22nd meeting: the status of Chemetco's preferred approach of selling the historic slag as a raw material in the manufacturing of cement and the appropriate analytical method in the event a solid waste determination is necessary. Exhibit 5 is a "technical brief"summarizing research conducted over the last several months which suggests that the analytical method SPLP (EPA Method 1312) is the appropriate test method for evaluating any slag which remains on site in a monofill or for other end uses where the disposition of the slag is certain. Chemetco's ultimate back-up alternative to sale of the material is a monofill. Exhibit 5 also summarizes the status of the cement option.

Ability to Pay - We have attached as Exhibit 6 various calculations using the ABLE model illustrating significant ability to pay issues for civil penalties even if nominal future environmental costs are utilized for illustrative purposes.

Please give me a call at your convenience to discuss how the settlement conference may be structured and to finalize an agenda.

Best regards.

Very truly yours,

George M. von Stamwitz

cc: Kim Fock
Heather Young
Jeff Trevino, Esq.
Thomas Martin, Esq. (2 copies)
Gerald Burke, Esq.
Patrick M. Flynn, Esq.
Jim Morgan, Esq. (3 copies)

Zinc Oxide Release Area

Below is a chronology of events summarizing Chemetco's response and attempts to comply with an Administrative Order regarding the release of stormwater at a non-permitted point:

- A release was found during a RCRA inspection by IEPA (a USEPA representative happened to be with the IEPA inspector that day) and was reported to the NRC on September 19, 1996.
- Chemetco originally intended to respond to the release as an emergency response action/removal action.
- A work plan for the immediate response was submitted on September 25, 1996.
- IEPA disagreed with this approach stating that the release was deliberate and not accidental release or spill.
- A revision was submitted on October 10, 1996, pursuant to an IEPA request.
- A Section 404 permit was obtained to construct two dams a diversion channel along Long Lake.
- The discharged material/stormwater was removed and isolated from the channel of Long Lake and placed in a location adjacent to but outside Long Lake.
- A Phase I Remediation Plan was submitted in November 1997.
- IEPA rejected the plan on February 13, 1998.
- A Phase I Remediation Plan was revised in March and submitted on April 10, 1998.
- The revised plan was approved in a letter dated June 10, 1998. Chemetco appealed several conditions of the approval in the summer of 1998. For example, the approval did not allow the the excavated material to be placed in an on-site, existing RCRA unit designated as a CAMU, as proposed but rather dictated off-site treatment and disposal. It also contained no clean-up objectives and required ECOTACO to be considered but did not have any guidance or information on this requirement.
- Because of the appeal of the plan and/or the criminal case, technical negotiations came to an end.
- A new management team was put in place at Chemetco in 1999 and a dialogue was initiated by the new management team in 1999.
- Several meetings and phone conferences took place in 1999 and 2000.
- In late 1999 IEPA and Chemetco agreed that Chemetco would submit a modification to the March 1998 plan which would include a Remedial Action Permit (RAP) application to establish a Temporary Unit (TU) to treat the material on-site, the segregation of the release area into two areas for the purpose of establishing clean-up objectives, and including new dates for all pertinent document deadlines contained in the original approval dated June 10, 1998.
- The modification to the closure plan was submitted on 1/31/00. The draft RAP application was submitted on 1/19/00. These documents are currently under review by IEPA.

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ARMSTRONG, TEASDALE, SCHLAFLY & DAVIS
A PARTNERSHIP INCLUDING PROFESSIONAL CORPORATIONS

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George M. von Stamwitz
(314) 342-8017

April 23, 1998

VIA UPS OVERNIGHT MAIL

Mr. Tom Martin
United States Environmental
Protection Agency
Region V
77 W. Jackson St.
Chicago, IL 60604

Mr. James Morgan
Assistant Attorney General
Environmental Control Div.
500 S. Second St.
Springfield, IL 62706

Mr. Greg Sukys
Environmental Enforcement Sec.
U.S. Department of Justice
P. O. Box 7611
Washington, D.C. 20044

RE: Chemetco, Inc. - Land and Water Issues

Gentlemen:

At the conclusion of Mr. Martin's site visit last fall, we discussed the type of tool that would need to be developed to bring resolution to several land and water issues that are of interest to USEPA and IEPA. I am enclosing a draft Consent Agreement and Consent Decree to promote resolution of all pending land and water issues in the near future.

Since the site inspection in which Mr. Martin participated, Chemetco has received two extensive requests for information. However, on the technical side, very little has been accomplished other than that the number of people at IEPA and EPA becoming involved is increasing. Chemetco is concerned that if the issues are addressed individually, inconsistent solutions could be sought.

The enclosed Consent Decree contains a technical strategy for resolving current issues and providing flexibility for future development. Central to this strategy is the designation of corrective action management units on the site which will provide Chemetco with the flexibility to move, treat, and/or dispose of material spilled in a protective and efficient manner. Also enclosed is a strategy for taking the slag pile off the plant area (and out of the wind) and into a mono-fill, pursuant to Illinois inert waste landfill regulations. These strategies will go a long

CSD Environmental Services, Inc.

February 1, 2000

Illinois Environmental Protection Agency
Bureau of Land #24
Permit Section
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

RE: 1198010003–Madison County
Chemetco, Inc.
RCRA Closure

Attention: Mr. Jerry Kuhn

Dear Mr. Kuhn:

Enclosed please find LPC-PA18 for the Revised Zinc Oxide Remediation Plan submitted on January 31, 2000. The form LPC-PA18 was not submitted with the January 31, 2000 submittal since it was lost by UPS while being delivered to Chemetco for signature. A new form was forwarded to Chemetco on Monday Jan 31, 2000 for signature and is provided under this cover.

If you have any questions please contact me at the number below.

Sincerely,

Cindy S. Davis, P.G.
President

2220 Yale Blvd., Springfield, IL 62703 · Phone 217-522-4085 · FAX 217-522-4087

Illinois Environmental Protection Agency P.O. Box 19276, Springfield, IL 62794-9276

RCRA INTERIM STATUS CLOSURE AND POST-CLOSURE
CARE PLANS GENERAL FORM
LPC-PA18

THIS FORM MUST ACCOMPANY ANY RCRA INTERIM-STATUS CLOSURE AND/OR POST-CLOSURE CARE PLANS OR MODIFICATION REQUEST SUBMITTED TO THE DIVISION OF LAND POLLUTION CONTROL. THE ORIGINAL AND TWO COPIES OF ALL DOCUMENTS SUBMITTED MUST BE PROVIDED.

FACILITY IDENTIFICATION (Information about the facility where the units are located which are addressed in this closure plan)

Name: Chemetco Inc County: Madison

Street Address: Route 3 Site # (IEPA): 1 1 9 8 0 1 0 0 0 3

City: Hartford Site No. (USEPA): I L D 0 4 8 8 4 3 8 0 9

OWNER INFORMATION

Name: Chemetco, Inc.

Mailing Address: P.O. Box 67
Hartford, IL 62048

Contact Name: Heather Young

Contact Title: Environmental Manager

Phone #: 618-254-4381

OPERATOR INFORMATION

TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

____ Original (New) Closure Plan
____ Original (New) Post-Closure Plan
____ Response to Disapproval letter
__X__ Modification Request
____ Additional Information for ____ / ____ / ____ Submittal (Log No. _____ if known)

Log No. of Most Recent Agency Approval/Disapproval Letter C-785

Date of Most Recent Agency Approval/Disapproval Letter 2/13/98

DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted)

Modification to Zinc Oxide Remediation Plan

LIST OF DOCUMENTS SUBMITTED (identify all documents in this submittal, including the cover letter)

Cover letter

Modification to Zinc Oxide Remediation Plan

UNITS UNDERGOING CLOSURE (please identify what type of units are addressed in the plan, their capacities and whether they are on the RCRA Part A for the facility)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Storage:				
Container (barrel, drum, etc.)	S01			
Tank	S02			
Waste Pile	S03			
Surface Impoundment	S04	1		N

UNITS UNDERGOING CLOSURE (continued)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Treatment:				
Tank	T01			
Surface Impoundment	T02			
Incinerator	T03			
Other (explain)	T04			
Disposal:				
Landfill	D80			
Land Application	D81			
Surface Impoundment	D83			

CERTIFICATION AND SIGNATURE (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126. Any submittal involving engineering plans, specifications and calculations as defined in the Illinois Professional Engineering Act and 68 IAC 1380 must be signed and certified by an Illinois registered professional.)

All closure plans, post-closure plans and modifications must be signed by the person designated below or by a duly authorized representative of that person:

Corporation - By a principal executive officer of at least the level of vice-president.
Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. is submitted with this application (a copy of a previously submitted authorization can be used).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature: _____ (Date) _____

Title: _____

Operator Signature: Heather [illegible] (Date) 2/1/00

Title: Environmental Manager

Engineer Signature: Ronald E Moss (if necessary) (Date) 1/31/2000

Engineer Name: Ronald E. Moss

Engineer Address: 2220 Yale Boulevard
Springfield, IL 62703

Engineer Phone No.: 217-522-4085

Engineer Seal:

RONALD E. MOSS
30144
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

JM:sf/sp/1243r,1-2

This Agency is authorized to require this information under Illinois Revised Statutes, 1979, Chapter 111 1/2, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

CSD Environmental Services, Inc.

January 31, 2000

Illinois EPA
Bureau of Land #24
Permit Section
1021 N. Grand Ave
P.O. Box 19276
Springfield, IL 62794-9276

Attention: Jerry Kuhn

RE: 1198010003– Madison County
Hartford/ Chemetco
Permit Section

Dear Mr. Kuhn:

Enclosed please find four copies of the revised Zinc Oxide Remediation Plan for your review. The plan proposes on site treatment of zinc oxide and off site disposal as a special waste as we discussed with you earlier. Revisions to the plan are highlighted and the strikeout feature was used to indicate deletions to the plan. Only those sections which were revised are included in this revision. Please insert these sections into the March 1998 Zinc Oxide Spill Remediation Plan. Form LPC PA-18 for signature and engineer certification will be forwarded to your office in the next few days. We forwarded LPC PA-18 to Chemetco on Thursday, January 27 for signature and UPS lost the package. A new LPC PA-18 was forwarded to Chemetco today for signature again. Attachment 10 - Remedial Action Permit will be forwarded to your office after we receive comments on the Draft version sent to your office on January 17, 2000.

Financial Assurance for the amount of $64,321 will be forwarded to your office by February 10, 2000.

If you have any questions please contact me at the number below or Heather Young at 618-254-4381.

Sincerely,

Cindy S. Davis, P.G.
President

cc: Heather Young @ Chemetco

PRINTED WITH SOY INK 2220 Yale Blvd., Springfield, IL 62703 · Phone 217-522-4085 · FAX 217-522-4087

CSD Environmental Services, Inc.

CHEMETCO, INC.
1198010003--MADISON COUNTY
ZINC OXIDE SPILL
REMEDIATION PLAN

PHASE I - MATERIAL REMOVAL AND PARTIAL CLOSURE

PREPARED FOR:

Chemetco, Inc.
Hartford, Illinois
1198010003 -- Madison County
ILD048853809

~~Revised MARCH 1998~~
Revised January 2000

2220 Yale Blvd., Springfield, IL 62703 · Phone 217-522-4085 · FAX 217-522-4087

TABLE OF CONTENTS

ATTACHMENTS

FIGURES

CHEMETCO, INC.
1198010003 -- MADISON COUNTY
REMEDIATION PLAN FOR ZINC OXIDE SPILL AREA
PHASE I - MATERIAL REMOVAL AND PARTIAL CLOSURE
~~**MARCH 1998**~~
January 2000

1.0 Introduction

A spill of zinc oxide was reported by Chemetco, Inc. (Chemetco) to the National Response Center and the Illinois Emergency Management Agency on September 19, 1996. The spill was found during a routine RCRA inspection conducted by the Illinois Environmental Protection Agency (IEPA) on September 18, 1996. Personnel from the United States Environmental Protection Agency (USEPA) were also present during the inspection. During the inspection, material that appeared to be zinc oxide was discharging from a pipe located south of Oldenburg Road. Sample results confirmed the spilled material was zinc oxide.

The IEPA has requested a RCRA closure plan be submitted for the spill area. In the course of negotiation, Chemetco has agreed to close the area in accordance with RCRA closure protocol. Submittal of this plan is not in any way an admission on Chemetco's behalf that the spill area is subject to RCRA requirements. The spill remediation plan will be submitted in two phases. Phase I will discuss Material Removal and Partial Demonstration of Clean Closure. Phase II will focus on Final Demonstration of "Clean Closure". This plan addresses Phase I - Material Removal and Partial Demonstration of Closure.

2.0 Facility Description

The Chemetco facility was constructed in 1969 and commenced production of anode copper, cathode copper, crude lead-tin solder, zinc oxide and slag in 1970. The Chemetco facility is located within a primarily agricultural, light residential area south of Hartford and is bounded on the west by major, heavily traveled rail and highway routes and on the south by a limited use secondary road. More specifically, the 200+ acre plant site is in the Southeast 1/4, Section 16, Township 4 North, Range 9 West of the Third Principal Meridian, in Madison County (see Figure 2-1).

2.1 Facility Address and Identification Numbers

Chemetco, Inc.
Route 3
Hartford, IL
IEPA #1198010003
USEPA # ILD048843809

2.2 Description of Spill Area

The spill was discovered during an IEPA inspection on September 19, 1996. The spill originated from a 10" pipe found on the south side of Oldenburg Road. The following actions were taken to stop the discharge both temporarily and permanently. The valve on the south side of Oldenburg Road was found by George Boud, Maintenance Supervisor, who excavated it and shut if off on September 18, 1996. Before the valve was closed, to find the source of the water all pumps in the stormwater collection system were isolated and operated individually to determine which pump might have caused the spill. The pump causing the discharge was

located at the West end of the East stormwater retention canal. The connection for the pump to the 10" line was also severed and capped. Refer to Figure 2-2 for the location of the 10" pipe.

CSD Environmental was retained on September 20, 1996 by Chemetco to conduct remediation of the spill area. During excavation activities, layers of zinc oxide material were found to a depth of 6 feet in Long Lake indicating historical management of zinc oxide.

This remediation plan addresses source removal of zinc oxide from a spill area approximately 300 feet long by 450 feet wide. Initially the spill area was reported to be approximately 600 feet wide, however, surveying confirmed the area to be 450 feet wide. To contain the spill, four separate containment areas were constructed within the impacted area. Containment Area # 1 contains the zinc oxide removed from the other three containment areas. Containment Area #1 measures approximately 200 x 370 feet and has approximately 1,500 cubic yards of zinc oxide stored within it. Containment Area #2 measures approximately 300 x 50 feet (initially reported as 90 feet) and was constructed to temporarily hold diverted water from a portion of Long Lake. Approximately 575,000 gallons of water is estimated to be stored in Containment Area #2. Containment Area #3 measures 250 x 200 feet. Zinc oxide was removed from Containment Area #3 and was placed into Containment Area #1. Containment Area #4 measures 200 x 300 feet and was not affected by the spill to the degree that the other containment areas were. Any visible zinc oxide found in Containment Area #4 was placed into Containment Area #1. Refer to Figure 2-3 for the spill location and the containment areas.

3.0 Overview of Removal Procedures Completed

A work plan for the immediate response to the spill was submitted by CSD Environmental Services, Inc. (CSD) to the Illinois EPA on September 25, 1997. On September 30, 1997, the IEPA responded to the plan requesting additional information. A revised work plan was submitted on October 10, 1996 addressing their concerns. Attachment 1 contains a copy of the October 10, 1996 Revised Work Plan. The Work Plan addressed temporary containment and removal of the zinc oxide from Containment Area #3.

The spill area was inspected by CSD Environmental to evaluate the best options for remediation. Visual criteria was used to delineate the extent of the spill area. Initially a diversion channel was constructed to reroute the lake past the spill area. A Section 404 Permit, of the Clean Water Act (CWA), was received from the Army Corp of Engineers (Corp) to build a diversion channel and two dams on Long Lake. Attachment 2 contains a copy of the permit and permit application received from the Corp.

3.1 Containment

The following items were constructed to achieve containment of the spill area:

- A road was constructed using limestone rock to allow heavy equipment and trucks access to the spill area. The road was advanced over impacted soil and a portion may be removed to enable soil remediation after the zinc oxide from Containment Area #1 is removed. The north side of the road was lined with a 8 to 10 millimeter thickness polyethylene plastic to inhibit water from flowing under the dam. Limestone rock was placed on top of the liner to hold it in place.

- An earthen berm approximately 3 to 5 feet in height was constructed around

the entire perimeter of the spill area. Surface water was diverted around the impacted area through a drainage ditch.

- A diversion channel 25 feet wide and 3 to 5 feet in depth was constructed to reroute water in Long Lake around the spill area. Two dams were constructed to assist in the diversion.

3.2 Dewatering

To remove the zinc oxide from Long Lake (Containment Area #3), dewatering was required. An impoundment was constructed within the contained spill area to hold water pumped from Containment Area #3. Prior to constructing the impoundment, any visual zinc oxide within the area was pushed with a bulldozer to the southwest corner of the spill area. An impoundment approximately 300 feet long by 50 feet wide was constructed. This impoundment was labeled Containment Area #2. The construction of Containment Area #2, in effect created two additional containment areas within the larger bermed area, Containment Areas #1 and 4. Containment Area #1 contained the largest percent of zinc oxide from the spill, therefore it was decided this area would be best suited to contain the zinc oxide to be removed from Long Lake. Containment Area #4 was not as significantly impacted from the spill as the other areas. Containment Area #4 was used for temporarily storing vegetation removed from the spill area and rock removed from the temporary pads constructed within Long Lake to allow equipment access. The portion of Long Lake to be dewatered and remediated was labeled Containment Area #3. Refer to Figure 2-3 for the spill locations and the containment areas.

3.3 Zinc Oxide Removal from Containment Area #3 (Long Lake)

The water from Containment Area #3 was transferred to Containment Area #2 using portable trash pumps. Two pads were constructed of limestone rock on the north side of Long Lake to allow the trackhoe access to the south side of the lake. All vegetation and debris (logs) within Long Lake were removed and temporarily stockpiled within Containment Area #4 for further handling. After the vegetation was removed and the dewatering was completed, excavation of impacted soils was initiated. Visual criteria was used to determine the initial excavation depth. Visual inspection of the soil revealed the zinc oxide extended to a depth of approximately 6 feet indicating the area was impacted from historical management of zinc oxide. Three sediment samples were collected after the initial excavation to determine if additional excavation was necessary. Refer to Figure 3-1 for the location of the sediment samples. Table 1 summarizes the analytical results. Copies of the analysis are provided in Attachment 3.

The sample results confirmed the visual criteria used to determine the initial excavation depth was an excellent indicator to identify the extent of contamination. Additional excavation was conducted in the area of sample 3. The temporary pads constructed to allow access across Long Lake were removed and temporarily stockpiled in Containment Area #4.

A Sampling and Analysis Plan was submitted to the IEPA on October 10, 1996. The sampling and analysis plan identified the sample locations and sampling parameters to determine closure. The plan was verbally approved by the IEPA on October 21, 1996. The plan was revised in February 1998 to address the IEPA's February 13, 1998 letter. Refer to Attachment 4 for a copy of the Sampling and Analysis Plan.

Photographs documenting the containment of the spill area, construction of Containment Area #2 and removal of the zinc oxide from Containment Area #3 (Long

Lake) are provided as Attachment 5.

Table 1
Soil Samples - Long Lake - After Initial Excavation
October 9, 1997
Chemetco, Inc.

Sample Number: / Parameter:	Long Lake 1	Long Lake 2	Long Lake 3
Total Metal Analysis in mg/kg			
Cadmium	56.3	8.3	16.1
Lead	27.1	75.5	333
Zinc	519	498	716
TCLP Metal Analysis in mg/l			
Cadmium	<0.004	<0.004	1.3
Lead	<0.042	<0.042	10.4
Zinc	4.5	4.9	77.1
Risk Based Objectives[1,2]			
Cadmium	0.005		
Lead	0.0075		
Zinc	5.0		

[1]Risk based objectives as proposed in Title 35: Environmental Protection: Subtitle G: Waste Disposal: Chapter I; Pollution Control Board; Subchapter F: Risk Based Cleanup Objectives; Part 742 - Tiered Approach to Corrective Action Objectives; Class I - Migration to Groundwater Route Values. Those TCLP values exceeding the objectives are highlighted. No objectives are identified for total metal values.

[2]Risk Based Objectives are proposed for comparison purposes only. Clean up objectives to be proposed by CSD Environmental Services by June 30, 1998.

3.4 Vegetation Removal

To remove the zinc oxide from the impacted area, it was necessary to remove standing and fallen trees to allow equipment access to the area. The trees removed were cut with chain saws above the roots. If visible zinc oxide was detected on the tree, the cut was made above the visual point. The trees were fed through a large tub grinder for shredding. The shredded material was temporarily stockpiled in Containment Area #4 for further handling. The tree roots were removed by excavation and also placed in Containment Area #4. The tub grinder was decontaminated using a high pressure steam wash before leaving the job site. All decontamination waters were containerized in a 475 gallon polyethylene tank and transferred to Containment Area #2, pending future on-site treatment.

In August of 1997, the tree stumps, shredded wood and limestone rock were removed from Containment Area #4 and placed into Containment Area #1.

4.0 Sampling and Analysis of Containment Areas 3 and 4

Sampling of Containment Area # 3 and a partial area of Containment Area #4 was conducted on October 23, 1996. Sampling was conducted in accordance with the approved Sampling and Analysis Plan except for the following changes:

- The area of Containment #3 was measured and found to be 28,600 ft^2 instead of 50,000 ft^2. The grid interval was changed to 50 feet to account for the decrease in the square footage.

- Sampling was conducted using a skid loader and five foot stainless steel split spoon samplers where possible. The original sampling and analysis plan indicated sampling would be conducted using a hand auger. The use of the split spoons allowed for a five foot sample to be collected at each sample location. Three split spoons were used to speed sample collection. Each split spoon was decontaminated between samples by washing with alconox, followed by steam cleaning and finally a tap water rinse.

Sampling began with CSD Environmental and Western Environmental personnel establishing the grid interval and marking each grid node with a construction stake. Each grid node was given a sample number identifying the sample location. Numbering corresponded to the Containment Area. For example, all samples from Containment Area #3 were identified as CA-3-#. Samples from Containment Area #4 were identified as CA-4-#. Samples were collected to demonstrate closure from Containment Areas 3 and 4. Only a portion of Containment Area #4 was sampled since the remainder of the area was flooded. Samples will be collected from Containment Areas 1, 2, and the remainder of 4 when the zinc oxide and water within

containment is removed. Samples were collected at depths of 6" and 18" below grade from all sample locations. In addition, at the request of the IEPA, samples from a depth of five feet were collected at three locations within Containment Area #3; CA3-3; CA3-4 and CA3-7. Figure 4-1 indicates the sample locations. The skid loader was not able to reach sample locations 6 and 9 within Containment Area #3 therefore, samples CA3-6 and CA3-9 were collected using a hand auger. The depth of the augured hole was measured with a tape measure to ensure samples were collected from the correct depths. Decontamination procedures of the hand auger were identical to those of the five foot split spoons.

Each sample was placed into laboratory provided glass jars. The jars were labeled indicating the sample location and depth, company name, and samplers initials. The jars were immediately placed into a pre-chilled cooler of approximately 4 degrees C. Each cooler was provided with a chain of custody form. The samples were hand delivered to Prairie Analytical Systems, Inc. in Springfield, Illinois by CSD personnel within 24 hours of sample collection.

All rinse waters used for decontamination were captured and containerized into a 475 gallon polyethylene tank. The rinse waters were transported to Containment Area #2 pending future on-site treatment. Refer to Section 5.2.

4.1 Establishment of Site Specific Clean Up Objectives

On June 5, 1997, the Agency's Tiered Approach to Corrective Action Objectives (TACO) was finalized by the Illinois Pollution Control Board. TACO allows two different methods for the establishment of Tier 1 clean up objectives for metals. One method allows for pH of the soils to be considered. Additional sampling was conducted to determine site specific clean up objectives. Specifically, the pH of the

soils and the concentration of total lead, cadmium and zinc in the soil was needed. On August 13, 1997, a hand auger boring (RA-1) was advanced to a depth of four feet at a location approximately forty feet north of MW-9. The sample was collected from an unaffected area which is representative of the soil type at the spill location. The topography of this area is higher in elevation that that of the spill area by a few feet. No visual contamination has been found in this area. Any releases from the 10" pipe would not have flowed to this area due to the difference in land elevations. The soils in this location consist of silty clays. A copy of the boring log from MW-9, demonstrating the soil type of the area is provided in Attachment 6. A soil sample was collected of the silty clay at this location and sent to Prairie Analytical Systems, Inc. (Prairie), in Springfield, IL, for analysis of pH using SW-846 Method 9045. Analysis showed the native soil in the area of the zinc oxide spill has a pH of 8.34. In addition to the sample collected from boring RA-1, soil samples were also collected from various locations in Containment Area #4, from beneath the rock road, and the ditch. A drill rig was used to collect the samples from beneath the rock road. Refer to Figure 4-2 for the rock road and ditch sample locations. The samples were sent to Prairie for analysis of total lead, cadmium and zinc. Analytical results are provided in Attachment 6.

On September 22, 1997 additional samples were collected from Containment Area #3 for analysis of total lead, cadmium and zinc. These samples were collected by chaining a five foot split spoon sampler to the bucket of trackhoe. The construction stakes marking the locations of the previous samples (refer to Figure 4-1) were used to determine sample locations. Samples were collected from CA3-1, CA3-2, CA3-4, CA3-5, CA3-6 and CA3-9. Locations CA3-7 and CA3-8 were not accessible to the trackhoe. The samples were sent to Prairie for analysis of total lead, cadmium and zinc. The sampling procedures discussed in Section 4.0 were followed for all samples collected. Analytical results are provided in Attachment 6.

Chemetco proposed to the Agency in the Revised Zinc Oxide Spill Remediation Plan dated October 1997 to use 35 IAC Part 742, Appendix B, Table C, pH Specific Soil Remediation Objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route (Class I Groundwater). Clean up objectives of 430 mg/kg and 53,000 mg/kg were proposed for total cadmium and zinc respectively. Using Appendix B, Table B, Tier 1 Soil Remediation Objectives for Industrial/Commerical Properties, a remediation objective of 400 mg/kg was proposed for lead. The Agency responded on February 13, 1998, stating they could not approve the clean up objectives as proposed due to the unique nature of the area. The agency requested Chemetco evaluate the ecological impacts associated with leaving contaminated soils in place in a wetlands area. During a meeting on March 19, 1998 between the IEPA and Chemetco, Chemetco agreed to evaluate the ecological impacts and submit a separate document proposing clean up objectives by June 30, 1998.

Since 1998 several discussions have been held between the IEPA and Chemetco regarding the use of "ECOTACO" to establish clean up objectives for the remediation area. The Agency is still developing the ECOTACO guidelines at this time. In order to expedite gross removal of the zinc oxide, Chemetco proposes to use 35 IAC Part 742 to establish pH Specific Soil Remediation Objectives for Containment Areas #1,2, and 4 and ECOTACO to establish clean up objectives for containment area #3. An ecological risk assessment for Containment Area #3 will be conducted once characterization and gross material removal of the remediation area is complete. The ecological risk assessment will be submitted as part of Closure.

4.2 Analytical Results - Containment Area #3

Tables 2 and 3 summarize the TCLP and total metals sample results collected from Containment Area 3. The sample results indicate no soil remaining in Containment Area #3 exhibits a hazardous characteristic. Samples for total lead, cadmium and zinc were not collected from locations CA3-7 and CA3-8 due to limited access. However, analyses of the twenty one samples collected from Containment Area #3 indicate the soils remaining are far below the pH specific soil remediation objectives for Inorganics and Ionizing Organics for the Soil Component of the Groundwater Ingestion Route for Class I Groundwater[1]. Chemetco proposes to conduct an ecological risk assessment of Containment Area #3 to establish clean up objectives. The ecological risk assessment will be included in Phase II of Closure. Copies of the analytical results are provided in Attachment 6.

~~[1]Risk Based Objectives are used for comparison purposes only. Clean up objectives to be proposed by CSD Environmental Services by June 30, 1998.~~

Table 2
TCLP Soil Sample Results
Containment Area #3
Chemetco, Inc.
October 24, 1996

Sample Number	Cadmium mg/l	Lead mg/l	Zinc mg/l
Reguatory Limit- 721.124	1.0	5.0	NA
CA3-1-6"	0.013	0.012	<0.002
CA3-1-18"	<0.001	<0.001	<0.002
CA3-2-6"	<0.001	<0.001	<0.002
CA3-2-18"	<0.001	<0.001	<0.002
CA3-3-6"	0.005	<0.001	0.04
CA3-3-18"	0.007	<0.001	<0.002
CA3-3-5'	0.020	<0.001	<0.002
CA3-4-6"	0.007	<0.001	<0.002
CA3-4-18"	0.005	<0.001	<0.002
CA3-4-26"	0.008	<0.001	<0.002
CA3-4-5'	0.007	<0.001	<0.002
CA3-5-6"	0.010	<0.001	<0.002
CA3-5-18"	0.006	<0.001	<0.002
CA3-6-6"	0.066	<0.001	<0.002
CA3-6-18"	0.061	<0.001	<0.002
CA3-7-6"	0.48	<0.001	8.1
CA3-7-18"	0.009	<0.001	0.21
CA3-7-5'	0.106	<0.001	1.32
CA3-8-6"	0.010	<0.001	<0.002
CA3-8-18"	0.010	<0.001	0.24
CA3-9-6"	0.029	<0.001	0.70
CA3-9-18"	0.047	<0.001	<0.002

Table 3
Total Soil Sample Results
Containment Area #3
Chemetco, Inc.
September 22, 1997

Sample Number	Cadmium mg/kg	Lead mg/kg	Zinc mg/kg
pH Specific Soil Remediation Objective	430[1]	400[2]	53,000[1]
CA3-1 6"	0.9	11	43
CA3-1 18"	2	11	30
CA3-1 4'	2	11	29
CA3-2 6"	2	13	33
CA3-2 18"	2	10	33
CA3-2 5'	1	7	23
CA3-3 6"	2	16	42
CA3-3 18"	1	12	43
CA3-3 5'	1	11	43
CA3-4 6"	1	8	32
CA3-4 18"	2	6	28
CA3-4 5'	1	9	35
CA3-5 6"	3	7	33
CA3-5 18"	3	10	38
CA3-5 5'	1	<2	20
CA3-6 6"	1	10	68
CA3-6 18"	1	59	89
CA3-6 3.5'*	0.5	7	21
CA3-9 6"	2	10	26
CA3-9 18"	3	9	44
CA3-9 5'	0.6	<2	14

[1]Objective established using 35 IAC Part 742, Appendix B, Table C - pH Specific Soil Remediation Objectives for Inorganics for the Soil Component of the Groundwater Ingestion Route (Class I). [2]A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12. Risk Based Objectives are proposed for comparison purposes only. ~~Clean up objectives to be proposed by GSG Environmental Services by June 30, 1998~~. Clean up objectives to be determined by ECOTACO after ecological risk assessment is conducted.* Split spoons did not retain full five foot sample.

4.3 Analytical Results - Containment Area #4

Tables 4 and 5 summarize the TCLP and total sample results collected from Containment Area #4. Analytical results are provided in Attachment 6.

Table 4
TCLP Soil Sample Results (mg/l)
Containment Area #4
Chemetco, Inc.
October 24, 1996

Sample Number	Cadmium mg/l	Lead mg/l	Zinc mg/l
Regulatory Limit from 721.124	1	5	NA
CA4-1-6"	0.018	<0.001	<0.002
CA4-1-18"	<0.001	<0.001	<0.002
CA4-2-6"	0.048	<0.001	<0.002
CA4-2-18"	0.014	<0.001	0.53
CA4-3-6"	<0.001	<0.001	<0.002
CA4-3-18"	0.005	<0.001	<0.002
CA4-4-6"	0.053	0.472	0.16
CA4-4-18"	0.107	0.047	11.7
CA4-5-6"	<0.001	<0.001	3.97
CA4-5-18"	0.032	<0.001	<0.002
CA4-9-6"	0.014	<0.001	<0.002
CA4-9-18"	<0.001	<0.001	<0.002

Table 5
Total Soil Sample Results (mg/kg)
Containment Area #4
Chemetco, Inc.
August 13, 1997

Location/Parameter	Total Cd	Total Pb	Total Zn
pH Specific Soil Remediation Objective	430[1]	400[2]	53,000[1]
CA4-1 (6")	2	41	131
CA4-1 (18")	.6	12	56
CA4-2 (6")	5	37	139
CA4-2 (18")	.7	13	41
CA4-3 (6")	10	74	224
CA4-3 (18")	2	17	52
CA4-4 (6")	2	71	207
CA4-4 (18")	1	23	70
CA4-5 (6")	.6	14	57
CA4-5 (18")	1	15	49
CA4-9 (6")	1	28	92
CA4-9 (18")	1	13	57
B-1 (6")	19	217	579
B-1 (18")	6	80	184
B-1 (5')	1	13	49

B-1 samples were collected from the berm of Containment Area #2. [1]Objective established using 35 IAC Part 742, Appendix B, Table C - pH Specific Soil Remediation Objectives for Inorganics for the Soil Component of the Groundwater Ingestion Route (Class I). [2]A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12. ~~Risk Based Objectives are proposed for comparison purposes only. Clean up objectives to be proposed by GSD Environmental Services by June 30, 1998.~~

4.4 Analytical Results - Rock Road

To determine the extent of impacted soil beneath the Rock Road, a drill rig was used to advance seven samples below the rock. Refer to Figure 4-2 for sample locations. Samples were collected at three depths, 6", 18" and 5'. All samples were labelled RR-# and were collected in accordance with the procedures discussed in Section 4.0. The samples were analyzed for total lead, cadmium and zinc. A composite sample was collected for TCLP lead and cadmium. Table 6 summarizes the samples collected from beneath the rock road. The results indicate additional remediation may be required in the area of sample number seven (RR-7). Sample results are available in Attachment 6.

Table 6
Total Soil Sample Results
Rock Road
Chemetco, Inc.
August 14, 1997

Location/Parameter	Total Cd	Total Pb	Total Zn
pH Specific Soil Remediation Obj.	430[1]	400[2]	53,000[1]
RR-1 6"	<0.2	13	55
RR-1 18"	0.6	13	47
RR-1 5'	<0.2	14	52
RR-2 6"	<0.2	15	62
RR-2 18"	<0.2	13	48
RR-2 5'	<0.2	17	50
RR-3 6"	<0.2	17	51
RR-3 18"	<0.2	14	47
RR-3 5'	<0.2	13	53
RR-4 6"	0.2	18	56
RR-4 18"	<0.2	17	43
RR-4 5'	0.8	18	45
RR-5 6"	0.8	23	49
RR-5 18"	1	16	47
RR-5 5'	<0.2	18	49
RR-6 6"	1	23	73
RR-6 18"	1	28	54
RR-7 6"	629	32607	33709
RR-7 18"	25	899	1772
RR-7 5'	1	34	64
Composite 6" (TCLP) mg/l	<0.04	<0.004	0.03
Composite 18" (TCLP) mg/l	<0.04	<0.004	<0.002
Composite 5' (TCLP) mg/l	<0.04	<0.004	<0.002

[1]Objective established using 35 IAC Part 742, Appendix B, Table C - pH Specific Soil Remediation Objectives for Inorganics for the Soil Component of the Groundwater Ingestion Route (Class I). [2]A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12. ~~Risk Based Objectives are proposed for comparison purposes only. Clean up objectives to be proposed by GSD Environmental Services by June 30, 1998.~~

4.5 - Analytical Results - Ditch

Three soil samples were collected on September 8, 1997 to determine the amount of soil excavation required in the ditch associated with the 10" pipe. Samples were labelled D-# and were collected at three depths, 6", 18" and 5'. Refer to Figure 4-2 for the sample locations. All samples were collected in accordance with the procedures discussed in Section 4.0. The samples were analyzed for TCLP and total lead, cadmium and zinc. Tables 7 and 8 summarize the samples collected. The results indicate additional remediation may be required in the areas of sample numbers D-2 and D-3. Sample results are available in Attachment 6.

Table 7
Total Soil Sample Results (mg/kg)
Ditch
Chemetco, Inc.
September 8, 1997

Location/Parameter	Total Cd	Total Pb	Total Zn
Remediation Obj.	430[1]	400[2]	53,000[1]
D-1 6"	3.1	132	346
D-1 18"	9.2	1926	19699
D-1 5'	<0.2	3.1	151
D-2 6"	161	13905	23431
D-2 18"	0.23	4.5	85
D-2 5'	0.48	7.3	48
D-3 6"	209	9740	2376
D-3 18"	105	1118	2.5
D-3 5'	0.8	2.5	62

[1]Objective established using 35 IAC Part 742, Appendix B, Table C - pH Specific Soil Remediation Objectives for Inorganics for the Soil Component of the Groundwater Ingestion Route (Class I). [2]A preliminary remediation goal of 400 mg/kg has been set for lead based on *Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*, OSWER Directive #9355.4-12. ~~Risk-Based Objectives are proposed for comparison purposes only. Clean up objectives to be proposed by CGD Environmental Services by June 30, 1998.~~

Table 8
TCLP Soil Sample Results (mg/l)
Ditch
Chemetco, Inc.
September 8, 1997

Sample Number	Cadmium mg/l	Lead mg/l	Zinc mg/l
Regulatory Limit from 721.124	1	5	NA
D-1 6"	0.04	<0.04	3.5
D-1 18"	0.07	2.4	6.5
D-1 5'	<0.004	<0.04	0.08
D-2 6"	2.5	93	44
D-2 18"	<0.004	0.13	0.25
D-2 5'	<0.2	0.13	0.70
D-3 6"	3.5	96	44
D-3 18"	0.023	0.07	1.8
D-3 5'	0.012	0.07	0.26

Samples above the regulatory limit are highlighted.

5.0 Remediation

~~Chemetco proposes to place the waste generated from the spill clean up into the zinc oxide bunker for final disposal. Chemetco requests under Section 5.6 of this document the Agency designate the zinc oxide bunker as a Corrective Action Management Unit (CAMU). The removal procedures of the zinc oxide, contaminated debris and water are outlined below.~~ Chemetco proposes to treat the waste generated from the clean up in Containment Area #1. Chemetco has applied for, under separate cover to the IEPA, a Remedial Action Permit (RAP) to designate Containment Area #1 as a temporary unit (TU). Designation of CA#1 as a TU allows the on site treatment of hazardous waste without being subject to facility wide corrective action, traditional public participation requirements, or traditional waste management unit design requirements. A copy of the RAP once submitted to the IEPA will be provided to be included as Attachment 10 to this document. Treatment will be conducted in accordance with the procedures identified in the RAP and the Waste Analysis Plan provided in Attachment 11. After treatment of the waste, the waste will be managed and disposed of as a special waste pursuant to 35 Ill. Adm. Code 809 at a permitted facility.

5.1. Removal Procedures Containment Area 1

5.1.A. - Water

Prior to removal of any zinc oxide, the water in Containment Area #1 will be removed. Refer to Section 5.2 for details on water removal.

5.1.B. - ~~Zinc Oxide Loading~~ Zinc Oxide Treatment

~~The fugitive dust plan will be amended to include loading of the zinc oxide material. The zinc oxide will be loaded "as is" by a trackhoe into polyethylene lined tandem trucks, covered and transported to the bunker. If it is determined the zinc oxide is to wet to place into the trucks, the zinc oxide will be spread out in Containment Area #1 using a trackhoe and a bulldozer to allow natural drying of the material. Care will be taken to ensure the material is not over dried to become an air emission source. Soil excavated in August of 1997 from the non clean fill area (also referred to as the refractory brick area by IEPA) will be mixed with the zinc oxide to ensure additional drying of the material. Mixing of the soil with the zinc oxide will occur within the trucks.~~ Containment Area #1 will be designated as a temporary unit (TU) to allow on-site treatment of the zinc oxide and other associated debris. Treatment will be conducted by Excel Environmental Construction (Excel) using a proprietary blend referred to as Enviro-Blend to stabilize the waste. Setup and construction of the proper blending system shall be completed utilizing two (2) twenty yard roll-off containers within the southwestern portion of Containment Area #1. One container (clean mix) will be used to store only clean Enviro-Blend material. The second container (mixing chamber) shall be used to mix the zinc oxide sludge material and the Enviro-Blend material together using a trackhoe. All treatment be conducted in accordance with the RAP and waste analysis plan contained in Attachments 10 and 11 of this document.

Upon completion of mixing the zinc oxide with the Enviro-Blend material, the combined maferial shall be loaded into an over-the-road container for shipment off site as a special waste to a permitted facility. Chemetco proposes to collect a sample for laboratory analysis of the UTS listed in Table 3 of

Attachment 10 on the first and tenth loads treated. A sample from approximately 10% of the outgoing loads will be collected thereafter. For example if 3000 yd^3 needs to be treated and 22 yd^3 are treated in one roll off at a time, a sample will collected every 13 loads. All sampling will be conducted in accordance with the RAP and waste analysis plan contained in Attachments 10 and 11 of this document.

5.1.C - Contaminated Stumps, Wood, and Limestone Rock

Contaminated stumps, wood, and limestone rock are stored in Containment Area #1. Composite samples were collected of the soil held in the roots, shredded wood and limestone rock. The samples were sent to Prairie Analytical for analysis of TCLP lead, cadmium and zinc. The results indicated the roots, shredded wood, and limestone rock failed the TCLP test for lead and cadmium. Refer to Attachment 7 for a copy of the analytical results.

Chemetco proposes to ~~place the contaminated stumps, wood, and limestone rock in the zinc oxide bunker designated as a CAMU. The stumps, wood and limestone rock will be loaded by trackhoe into tandem or trailer trucks for transportation to the zinc oxide bunker~~ decrease the size of the material by use of a demolition head mounted on the trackhoe to break the stumps and rocks into manageable sizes for treatment. The material will be then be treated in accordance with the procedures in 5.1.B.

5.2 Containment Area #2

Containment Area #2 measures approximately 300 x 90 feet and was constructed to temporarily hold water from the diverted portion of Long Lake. Prior to constructing the impoundment, any visual zinc oxide within the area was pushed with a bulldozer to the southwest corner of the spill area. Approximately 575,000 gallons of water is estimated to be stored in Containment Area #2. A sample of the water contained within Containment Area #2 was collected on October 11, 1996 and analyzed for Chemetco's NPDES discharge parameters pursuant to Chemetco's NPDES Permit #IL0025747. Table 9 summarizes the analytical results. Exceedences of the General Use Standards were found for Cadmium, Copper, Iron, Manganese, Lead, Suspended Solids and Zinc. CSD verbally requested approval from the IEPA, Bureau of Water, on October 21,1996 for an emergency discharge of the water within Containment Area #2 to Long Lake. This request was denied by the IEPA, Bureau of Water on October 26, 1997. In response to the denial, CSD collected an additional sample of water from Containment Area #2 and analyzed for dissolved cadmium, copper, iron, lead, manganese and zinc. Sample results indicated after filtration cadmium, manganese and total suspended solids exceeded the general use standards. The sample results are provided in Table 10. On November 27, 1996, CSD submitted a letter requesting the Agency's assistant in discussing disposal options for the impounded water. The IEPA responded by letter on December 6, 1997 denying a provisional variance request for discharge of the water. In response to the IEPA's variance denial, a formal request for a variance to discharge the water after treatment was requested by Chemetco on March 20, 1997. A copy of CSD's November 27, 1996 letter, the IEPA response, and Chemetco's March 20, 1997 request for a variance is provided as Attachment 8. The IEPA denied the request for a provisional variance on March 31, 1997. A meeting was held with the Bureau of Water on April 9, 1997 to discuss the variance denial. The Bureau of Water requested CSD submit an NPDES application to discharge the water. CSD explained that due to time constraints we were requesting the variance to discharge the water.

CSD informed the Bureau that CA#2 needed to be dewatered in order to begin zinc oxide removal in CA#1. The Bureau again refused the variance request. In response to the variance denial, an application for an NPDES permit and a construction permit to temporarily discharge the impounded water was submitted to the IEPA on April 16, 1997. The NPDES application was granted, however the construction permit is on hold. Chemetco ~~will be collecting~~ collected additional samples from Containment Areas 1,2, and 3~~, and 4~~ on July 29, 1999 to evaluate ~~if the water still exceeds the general effluent standards.~~ water quality. Table 11 summarizes the results of the sampling. No water was present in Containment Area #4 for sample collection. the samples indicate the water quality in Containment Areas 1, 2 and 3 has improved.

Chemetco proposes ~~is evaluating several options for handling the water. Option 1)~~ to transport the water to the a new stormwater basin~~ to be constructed in 1998.~~ The water from the retention basin will be used in the closed loop stormwater system within the plant. ~~Option 2) continue to work with the Bureau of Water for a permit to allow a temporary unit to treat and discharge the water; and Option 3) resample the water and apply to the Bureau of Water for permission to discharge to either Long Lake or the Cahokia Diversion Canal. All necessary permits will be obtained from the Bureau of Water before any discharge occurs.~~

5.2.A. Containment Area #2 Berms

The berms will be sampled in accordance with the procedures outlined in the Sampling & Analysis Plan contained in Attachment 4. Samples will be collected for TCLP and total pH, zinc, lead and cadmium on a 50 foot grid. Sample results will dictate if additional remediation is required. If the samples fail the TCLP test, ~~the soil will be placed in the bunker designated as a CAMU~~ the soil will be transported to CA#1 and treated in accordance with the procedures in

5.1.A. If the samples pass the TCLP test, the results will be compared to the remediation objectives. If the sample results are below the remediation objectives, the soil from the berms will be spread out in Containment Areas 2 and 4. Soil which exceeds the remediation objective ~~will be disposed of in the zinc oxide bunker.~~ but is below the hazardous level will be declassified as a special waste and disposed of as solid waste to a permitted facility.

Table 9
Water Sample Result from Containment Area #2
Collected on October 11, 1996
Analyzed for NPDES Discharge Parameters
Total Metals

Parameter	Result in mg/l	General Discharge Standard
Silver	0.021	0.1
Boron	5.54	*
BOD	<7.5	30
Cadmium	0.563	0.15
Chlorine	<0.05	*
Copper	1.20	0.5
Iron	2.57	2.0
Hexane soluble Oil and Grease	11.5	15.0
Manganese	2.42	1.0
Nickel	0.14	1.0
Lead	1.59	0.2
Suspended Solids	67	15.0
Zinc	6.63	1.0

Those samples exceeding the General Use Standard as defined in 35 Ill. Adm. Code, Subtitle C, Part 304 are highlighted. * No standard has been established in 35 Ill. Adm. Code, Subtitle C, Section 304.

Table 10
Water Sample Result from Containment Area #2
Collected on October 28, 1996
Analyzed for NPDES Discharge Parameters
Dissolved Metal Analysis

Parameter	Result in mg/l	General Use Standard
Cadmium, diss	0.22	0.15
Copper, diss	0.136	0.5
Iron, diss	<0.007	2.0
Lead, diss	0.010	0.2
Manganese, diss	2.14	1.0
Zinc, diss	0.68	1.0
Total Suspended Solids	23	15
pH	8.53	6-9

Table 11

Water Sample Result from Containment Areas #1, 2, and 3

Collected on July 29, 1999

Result are in mg/l

Parameter	CA1	CA2	CA3	General Discharge Standard
Boron	1.60	1.26	0.958	**
Manganese	1.55	0.819	0.484	1.0
Iron	0.421	0.360	0.357	2.0
Nickel	0.034	0.008	0.024	1.0
Copper	0.087	0.054	0.041	0.5
Zinc	0.238	0.031	0.056	1.0
Silver	<0.001	<0.001	<0.001	0.1
Cadmium	0.005	0.001	0.003	0.15
Lead	0.136	0.029	0.037	0.2
Fluoride	5.75	4.52	4.38	15.0
Chloride	657	709	372	**
BOD_5	4.4	<1.0	<1.0	30
Total Suspended Solids	10.0	5.0	7.0	15.0
Chlorine	0.1	0.2	<0.1	**
FOG, total	1.1	0.4	0.8	**

Those samples exceeding the General Use Standard as defined in 35 Ill. Adm. Code, Subtitle C, Part 304 are highlighted. ** No standard has been established in 35 Ill. Adm. Code, Subtitle C, Section 304.

5.3 Removal Procedures Containment Area #4

All visible zinc oxide was removed from Containment Area #4 and placed into Containment Area #1 at the time of construction of Containment Area #2. Tree stumps, shredded trees and rock were temporarily stored in Containment Area #4. The stumps, wood, and limestone rock were moved in August 1997 into Containment Area #1.

5.4 Removal Procedures for the Ditch

The vegetation in the ditch was removed in August of 1997. All vegetation was placed into Containment Area #1. Soil samples were collected for total and TCLP lead, cadmium, and zinc. Refer to Section 4.5 for a discussion of the sample results. The results indicated samples D-2 and D-3 exceeded the pH specific soil remediation objectives for inorganics and ionizing organics for the soil component of the groundwater ingestion route for class I groundwater. ~~However, remediation objectives for the spill have not yet been established. Chemetco proposes to submit by June 30, 1998 clean up objectives for the spill area which consider the ecological impacts associated with leaving contaminated soils in place in the spill area.~~ The IEPA requested on February 13, 1998 additional soil samples in the area of the ditch to define the lateral (east and west) extent of the contamination. Six additional samples are proposed to define the lateral extent of contamination. Refer to the Revised Sampling & Analysis Plan in Attachment 4 for sample locations.

~~If it is determined after the remediation objectives are established that additional remediation is necessary,~~ Chemetco proposes to excavate ~~excavation~~ from 0 to 18 inches in depth ~~may be required~~ in the area of sample D-2 and 0 to 5 feet in depth in

the area of sample D-3. Excavation of soil will continue up to the soil sampling location which met the cleanup objectives or additional soil sampling will be conducted. Refer to Figure 5-1 for the additional area to be excavated. It is estimated an additional 106 cubic yards of impacted soil ~~may~~ will be excavated. The soil removed will be ~~placed into the zinc oxide bunker.~~ transported to CA#1 and treated in accordance with the procedures in 5.1.A.

5.5 Rock Road

Analytical results indicated additional excavation in the area of samples RR-7 may be needed. The results indicated samples RR-7 collected at 6 and 18" exceeded the pH specific soil remediation objectives for inorganics and ionizing organics for the soil component of the groundwater ingestion route for class I groundwater. ~~However, remediation objectives for the spill have not yet been established. Chemetco proposes to submit by June 30, 1998 clean up objectives for the spill area which consider the ecological impacts associated with leaving contaminated soils in place in the spill area. If it is determined after the remediation objectives are established that additional remediation is necessary,~~ Chemetco proposes to excavate ~~excavation~~ from 0 to 18 inches in depth ~~may be required~~ in the area of sample RR-7. Excavation of soil will continue up to the soil sampling location which met the cleanup objectives or additional soil sampling will be conducted. Refer to Figure 5-2 for the additional area to be excavated. It is estimated an additional 37 cubic yards of impacted soil ~~may~~ will be excavated. Chemetco proposes to excavate the soils beneath the rock road when the closure on Containment Area #3 is addressed. If additional remediation is required in the area of Containment Area #3 and Long Lake, access to these areas is critical. The rock road provides this access plus the road itself acts as a dam between Containment Area#3 and the other Containment Areas. Removal of the road at this time would allow the water contained in CA#3 to enter into CA#1,2

and 4 possibly contaminating potentially clean areas. ~~The soil removed will be placed into the zinc oxide bunker.~~

~~5.6 Placement of the Wastes into the Zinc Oxide Bunker~~

~~To facilitate a rapid and cost effective site remediation, Chemetco requests the IEPA designate the zinc oxide bunker as a Corrective Action Management Unit (CAMU). Creation of a CAMU will allow Chemetco to place the spilled zinc oxide into the bunker without triggering land disposal restrictions or minimum technology requirements. The Zinc Oxide Bunker Closure Plan will be revised to include an evaluation of the structuarl integrity of the bunker and a revised closure cost estimate to reflect the addition of these materials in the bunker.~~

~~The material will be loaded into trucks, tarped and transported to the southwest corner of the zinc oxide bunker. The material will be placed on the pile by either conveyer, crane or a haul road constructed. If it is necessary to unload the material from the trucks, a containment area will be constructed. Care will be taken to ensure no RCRA regulated units are created during the transferring of material. It is estimated between 2,000 to 3,000 cubic yards of zinc oxide and contaminated stumps, wood, and limestone rock will be added to the bunker. Refer to Figure 5-3 for the placement location within the bunker. Chunky slag will be placed over the zinc oxide for wind protection. The fugitive dust plan will be revised to include the addition of material to the bunker. The bunker will be closed in accordance with the contingent closure plan for the zinc oxide bunker contained in the Interim Status Revised Closure and Post Closure Plans, dated June 1994, prepared by CSD Environmental Services, Inc. This plan will be revised to include an evaluation of the structual integrity of the bunker and a revised closure cost estimate to reflect the addition of these materials in the bunker.~~

~~Chemetco proposes creation of a CAMU in accordance with the following:~~

~~1) The CAMU will facilitate a reliable, effective, protective and cost effective remedy;~~

~~The zinc oxide bunker is currently used to store zinc oxide. The bunker was constructed of 8 inch reinforced concrete walls and concrete floor. Stormwater which falls on the bunker is collected in the southeast corner and managed in the closed loop stormwater management system. No releases outside of the secondary containment from the bunker have been found by Chemetco since its construction in 1984. The bunker is a reliable and effective in containing and controlling releases to the environment. Chemetco proposes to have the structural integrity of the bunker inspected by a structural engineer prior to placement of any additional material. The zinc oxide, stumps, and rock once placed into the bunker will be covered with chunky slag to reduce air emissions. Care will be taken during placement to keep dusts to a minimim. An addendum to the fugitive dust plan will be prepared to address fugitive dust concerns during placement and closure of the bunker. Closure of the bunker will be addressed in the revised zinc oxide bunker closure plan.~~

~~Placement of the zinc oxide into the bunker is the most cost effective means of remediation. The closure cost to dispose of the zinc oxide in the bunker is estimated at $ 108,302 vs off site landfill disposal at $725,000. In addition, off site disposal reduces the amount of available hazardous landfill space in Illinois by approximately 3,000 yards. A portion of the material, the stumps, wood and limestone rock is classified as hazardous debris and cannot be treated to meet the land disposal restrictions without size reduction. Chemetco cannot operate a shredder or crusher on site to reduce the size of the material without a Part~~

~~B operating permit for a treatment unit. The hazardous debris cannot be shipped to Peoria Disposal (PDC) in Peoria, IL for disposal because PDC has a sizing requirement for incoming materials. The only potential RCRA disposal facility found in close proximity to Chemetco is Chem Met Services, Inc. in Michigan. Chem-Met has a permitted crusher onsite, however, due to the size of the stumps and the dirt contained within, acceptance may be denied if Chem Met determines the material cannot be processed on site.~~

~~2) Waste management activities associated with the CAMU shall not create unacceptable risks to humans or the environment resulting from exposure to hazardous wastes or hazardous constituents;~~

~~Management of the zinc oxide in the zinc oxide bunker will not pose or create any unacceptable risks to humans or the environment. Zinc oxide is currently managed in a safe manner inside the bunker. Removal of the zinc oxide from the spill area will result in decreasing the risk to contaminate groundwater, surface water and ecologically impact the spill area.~~

~~3) Areas within the CAMU, where wastes remain in place after closure of the CAMU, shall be managed and contained so as to minimize future releases, to the extent practible;~~

~~The zinc oxide bunker will be capped pursuant to the RCRA requirements of 724.410. The bunker will be closed as a landfill and will provide long-term minimization of migration of liquids; function with minimum maintenance; promote drainage and minimize erosion or abrasion of the cover; accomodate settling and subsidence so that the cover's integrity is maintained; and have a permeability less than or equal to the permeability of the bottom liner. In~~

~~addition, after closure Chemetco will continue to:~~

- ~~maintain the integrity and effectiveness of the final cover;~~
- ~~continue to operate the leachate collection and removal system until leachate is no longer detected;~~
- ~~maintain and monitor the groundwater monitoring system and comply with all other applicable requirments of Subpart F;~~
- ~~prevent run-on and run-off from eroding or otherwise damaging the final cover; and~~
- ~~protect and maintain surveyed benchmarks used in complying with Section 724.409.~~

~~4) The CAMU shall expedite the timing of remedial activity implementation, when appropriate and practible;~~

~~A CAMU is a remedial option which Chemetco can pursue in a timely manner. Off-site disposal will be so costly as to delay implementation of the spill remediation plan.~~

~~5) The CAMU shall, to the extent practible, minimize the land area of the facility upon which wastes will remain in place after closure of the CAMU.~~

~~Removal of the zinc oxide and contaminated debris from the spill area will reduce the land area of the facility upon which waste will remain in place. Placement of the zinc oxide from the spill area into the bunker (estimated at 2,000 to 3,000 cubic yards) will not increase the areal size of the bunker. The elevation of the zinc oxide at the south side of the bunker is approximately 13 feet lower than the north side of the bunker. It is estimated a minimum of an~~

~~additional 14,000 cubic yards of wastes can be safely placed in the bunker.~~

~~5.7~~ 5.6 Equipment Decontamination

All equipment, including trackhoes, tandem trailers, semi trailers, smaller equipment and tools shall be scraped to remove waste residues. The waste residues will be collected and placed into the bunker with the wastes. After scraping to remove waste residues, all equipment shall be be power washed with a high pressure steam cleaner. All rinse waters shall be captured and placed into the AAF scrubber ponds. All decontamination will be conducted at the decontamination pad constructed on the east side of the spill area.

6.0 Proposed Sampling and Analysis to Demonstrate Clean Closure

Sampling and analysis of Containment Areas #1, 2, the remainder of 4 and the ditch will be conducted as described in Sections 6.1, 6.2, and 6.3 below. Phase II of the Remediation Plan - Demonstration of Clean Closure will be submitted within 90 days after all sampling is completed.

6.1 Sampling and Analysis of Containment Areas #1 and #2

Following removal of the zinc oxide material, the procedures outlined in CSD's Revised Sampling and Analysis Plan ~~dated February 1998~~ provided in Attachment 4 will be followed. In response to the IEPA's comments on 2/13/98 sampling is proposed along the perimeter of the spill area to determine if additional contamination exists. Also, sediment sampling of Long Lake will be conducted to determine if contamination may have been carried into Long Lake. Two additional sediment sample locations have been added pursuant to the IEPA's request in item 8 of the Agency's June 10, 1998 approval letter. Refer to the Sampling and Analysis Plan in Attachment 4 for sample locations.

6.2 Sampling & Analysis of Remainder of Containment Area 4

A partial sampling of this area was conducted on October 23, 1996 and August 13, 1997. Samples were collected from locations CA4-1,CA4-2, CA4-3, CA4-4, CA4-5 and CA4-9 on October 25, 1996 for TCLP lead, cadmium and zinc. All samples were below the regulatory limit for hazardous waste. To determine clean up objectives additional samples were collected from the same locations in August of 1997 for total metal analysis of lead, cadmium and zinc. Refer to Section 4. 1 for a discussion of the clean up objectives. The remainder of the samples were not collected due to the

presence of Containment Area #2 and contaminated stumps, wood, and limestone rock. The stumps, wood, and limestone rock have been removed, but Containment Area #4 was to wet in September 1997 to allow sampling to occur. ~~In the event the area dries, samples CA4-5 and CA4-10 will be collected.~~ Pursuant to the IEPA's June 10, 1998 approval letter, containment area 4 will be resampled for the entire list of parameters specified in the Sampling and Analysis plan contained in Attachment 4. The samples will be collected using the same procedures described in Attachment 4. The IEPA requested in condition #7 of the June 10, 1998 closure plan approval letter a copy of the metal assay results from MIDCO labs. The results are provided as Attachment 12 to this report.

6.3 Sampling and Analysis of the Ditch

~~If~~ After excavation of the ditch is conducted, refer to Section 5.4 for a discussion of the excavation, the ditch will be re-sampled. The samples will be collected in accordance with the Sampling & Analysis Plan in Attachment 4.

6.4 Sampling and Analysis of the Rock Road

~~If~~ After excavation of the Rock Rock is conducted, refer to Section 5.5 for the discussion of excavation, a portion of the rock road will be re-sampled. The samples will be collected in accordance with the Sampling & Analysis Plan in Attachment 4.

6.5 Sampling and Analysis of Long Lake

~~Six~~ Eight sediment samples are proposed to be collected from the tributary to Long Lake. Refer to the Sampling and Analysis plan in Attachment 4 for sampling methods and locations.

7.0 Groundwater Monitoring Plan

The purpose of this proposed Phase I groundwater investigation, is to determine the absence/presence of hazardous constituents in the shallow perched aquifer related to the zinc oxide spill. Well installation will confirm or deny the existence of the shallow perched aquifer encountered during previous investigations at the facility north and east of the spill site as well as the subsurface characteristics.

7.1 Regional Geologic and Hydrogeologic Information

The Chemetco site is located in the floodplain of the Mississippi River in an area locally referred to as the American Bottoms. This area is characterized by relatively flat topography. The gradient of the Mississippi River in the American Bottoms is about 6 inches per mile or 9.5×10^{-5}. The land surface gradient over a similar area is about 12 inches per mile or 6.3×10^{-5} both of these gradients are extremely flat.

Precipitation to the American Bottoms falls on the flat surface and either infiltrates into the ground or evaporates. Because of the flat surface there is very little runoff. Recharge to the groundwater system in this area is received from the highlands surrounding the American Bottoms, infiltration from channels, and Mississippi River flood waters. Infiltration of water into the ground is restricted by the clay and silt layer found near the surface. Beneath the clay and silt layer lies the regional American Bottoms sand and gravel aquifer which extends to bedrock. The source of some recharge may be the bedrock aquifer near pumping centers. Under non-pumping conditions the regional groundwater flow in the American Bottoms aquifer is expected to be toward the west or southwest towards the Mississippi River.

The regional aquifer is generally greater than 90 feet thick and extends to the bedrock.

Although there is not distinct boundary between the formations in the regional aquifer, the regional aquifer is considered here to be comprised of two distinct hydrogeologic units given the gradation from silty sand to coarse sand and gravel. The clean sand and gravel deposits in the bottom zone of the American Bottoms aquifer constitute the major water-producing zone in the area. These deposits are utilized as groundwater supplies for municipal and industrial withdrawals, including Chemetco. Figure 7-1.1 shows the groundwater divides created by the major pumping centers in the area of the Chemetco site (Kohlhase, 1987). In 1951 these pumping centers produced a maximum withdrawal of 110 million gallons per day (mgd). In 1985 the withdrawal rate had declined to about 60 mgd (Kohlhase, 1987).

The Illinois State Water Survey (Water Survey) conducts periodic water-level monitoring programs of selected wells in the American Bottoms aquifer. Utilizing this water-level data the Water Survey produces a potentiometric map of the aquifer. This potentiometric map shows that aquifer withdrawals have significantly changed the groundwater flow direction within the aquifer and the flow is directed towards the various pumping centers. Using the potentiometric map, the Water Survey has determined the approximate locations of groundwater divides between the pumping centers. These divides, whose exact locations change according to variations in recharge and withdrawal rates, delineate the approximate areas of influence of the pumping centers.

Figure 7-1.1. shows the groundwater divides determined by the Water Survey (Kohlhase, 1987). This figure shows that the Chemetco site is on the edge of the area of influence of the Poag pumping center. The Chemetco site is also located just south of the areas of influence of the Roxana and Wood River pumping centers. The regional mapping does not have sufficient delineation of the groundwater contours in the Chemetco site area to determine the regional direction of groundwater flow. The

flow in this area, however, should be towards the Mississippi River.

Because of the prolific production of the American Bottoms aquifer, the limestone aquifer below the American Bottoms aquifer has not been tapped for groundwater supplies. It is believed, that the limestone aquifer could also be a source for high capacity production wells; water sampling in other areas has shown that this bedrock aquifer is highly mineralized.

7.1.1. Description of Class I Groundwater

The American Bottoms Aquifer as described in Section 7.1. and 7.2. is a Class I Groundwater pursuant to Ill. Administrative. Code, Part 620.210.

7.1.2. Identification of Private/Potable Water Supply Wells

The Chemetco facility is located in a sparsely populated area. Consequently the number of withdrawal wells within a one (1) mile of the site is low. The only commercial/industrial are Chemetco's own wells. The well water is used for human consumption.

Well logs for ten (10) private wells within one (1) mile of the Chemetco facility were obtained from, State Agencies. Figure 7-1.2. indicates their locations in relation to the site. Several of the wells indicated in the figure are believed to be no longer in use. Through field investigations to be conducted concurrent with other field sampling activities, Chemetco will verify which wells remain in service in the area.

7.1.4. Identification of Units Beneath the Site Subject to Class I Standards

The American Bottoms Aquifer is subject to Class I standards as is any hydraulically connected unit. The shallow perched groundwater zone, if encountered beneath the spill area, would be subject to Class I groundwater quality standards if hydraulically connected to the American Bottoms Aquifer. If an aquitard exists, as it does north of the spill area, the shallow perched zone may be Class II.

7.1.5. Identification of the Source of All Municipal Water

The regional aquifer is reportedly a drinking water source downgradient of Chemetco; Hartford municipal wells are reportedly northwest of the facility. In addition, potable water for the Chemetco facility is drawn from the two facility water supply wells, screened in the lower regional aquifer.

7.2 Characterization of Geology

As previously stated, the purpose of this proposed Phase I groundwater investigation, is to determine the absence/presence of hazardous constituents in the shallow perched aquifer related to the zinc oxide spill. At this time it can only be assumed that the hydrogeologic/geologic conditions discussed below can be correlated from previously studied areas at this facility to the area beneath the zinc oxide spill. Well installation will confirm or deny the existence, as well as the characteristics, of a shallow perched aquifer.

Chemetco has conducted interim-status groundwater monitoring for units north of the zinc oxide spill area since January 1983. During related investigations, it has been determined that the general hydrogeology of the site consists of an aquitard that

contains lenses of water-bearing sand and silt underlain by the regional American Bottoms sand and gravel aquifer. A cross-section is included as Figure 7-2.1. The aquitard contains a perched sand aquifer that outcrops to surface south of the facility as depicted in Figure 7-2.2.

The Chemetco facility is underlain by a clay and silty clay unit ranging from approximately 20 to 60 feet in thickness. Interbedded within the clay in the southeastern quadrant of the facility is a sand lense (also referred to as the perched sand aquifer). The perched sand aquifer extends from 5 to 20 feet below grade with a maximum thickness of 15 feet and is bounded above and below by the clay and silty clay. The hydraulic conductivity of the perched unit has been calculated from slug test data to be 2.8×10^{-3} cm/sec. The results of site investigations indicate that the water flows from north to south across the southeastern quadrant of the facility. Data indicate the water-bearing formation does not extend to the facility northern and western boundaries and stops within 300 feet of the southern and eastern boundaries. A second sand and silt lense has been identified, based on water level elevations, to the east of well 12.

The clay layer averages 10 feet in thickness beneath the shallow perched zone and increases to 25 feet in thickness in the northern portions of the Chemetco facility (where the perched sand aquifer is not present). The hydraulic conductivity of the clay layer based on slug test data indicate a hydraulic conductivity of 4.6×10^{-5} cm/sec which is two or more orders of magnitude lower than the aquifers and therefore constitutes an aquitard.

Beneath the clay is a layer of fine to silty sand that grades to coarse sand with depth and finally to sand and gravel. This unit is the regional American Bottoms Aquifer. The regional aquifer is generally greater than 90 feet thick and extends to the bedrock.

Although there is not distinct boundary between the formations in the regional aquifer, the regional aquifer is considered here to be comprised of two distinct hydrogeologic units given the gradation from silty sand to coarse sand and gravel. The hydraulic conductivity of the upper regional zone determined by slug tests and pumping tests is 1×10^{-2} cm/sec. The hydraulic conductivity of the lower zone of the regional aquifer determined by pumping tests is 1×10^{-1} cm/sec. Regional groundwater flows under non pumping conditions towards the Mississippi River.

Chemetco will attempt to gather the following information during installation of the proposed well system specific to the area beneath the spill:

- A qualitative assessment of porosity, texture, uniformity, lithology of all significant units
- Significant structural features
- Stratigraphic contacts between significant formations/strata
- Zones of high permeability, fracture or channeling in consolidated and unconsolidated deposits
- Perched aquifers
- Location of borehole, depth of termination
- Zone of saturation/thickness of the unit
- Interpretations of hydraulic connections between saturated zones

7.3 Proposed Monitoring Well System

A monitoring well system is proposed herein which is intended to yield representative groundwater samples from shallow groundwater beneath the Chemetco facility. Again, the purpose of this groundwater investigation is to determine whether shallow groundwater has been impacted by the zinc oxide spill undergoing clean-up.

7.3.1. Well Location and Screens

Based on data measurements collected during investigations conducted at Chemetco, flow in the shallow perched groundwater zone is thought to move predominately from north to south across the southeastern quadrant of the facility. Quarterly potentiometric maps for 1996, Figures 7-3.1. through 7-3.4., are included for reference. Therefore, Chemetco is anticipating a similar flow regime in the vicinity of the zinc oxide spill area. Chemetco proposes to install shallow monitoring wells located near sample location RR-7, northeast of RR-6, northeast of RR-2, and southeast of boring D-3 as depicted in Figure 7-3.5. Chemetco will submit the exact locations of the monitoring wells to the IEPA for approval prior to installation. The proposed wells will be identified on a scaled map that identifies the concentration and depth of contamination in the soil. All wells will be screened at similar depths. Monitoring wells shall be constructed with the top ten feet of the well screen to be placed to intercept the water table. Adjustments to include seasonal fluctuations and well construction requirements may need to be done. Total depth of wells should not exceed 25 feet below ground surface (BGS). If no substantial sand lenses are encountered during drilling activities, the screens shall be set at the first water-bearing zone as encountered in the field. Hydraulic conductivity testing shall be performed in the field on all four wells.

7.3.2. Drilling Operations

Wells will be installed using a 4 1/4" hollow stem auger. There will be no addition of fluids or drilling muds. All drill cuttings will be containerized and disposed of properly.

7.3.3. Construction, Development, and Maintenance of Wells

All wells shall be constructed pursuant to Ill. Admin. Code, Part 920 of the Illinois Water Well Construction Code and the Well Construction Diagram included as Figure 7.3.6. All borings shall be continuously sampled using five foot split spoon samplers. A typical boring log and well completion report is included as Figures 7-3.7. and 7-3.8. Wells shall be constructed of the following materials:

- Well screens and risers shall be constructed of schedule 40 PVC, ASTM 2 pitch threads, 2 inch inside diameter;

- The screens shall be either 2 in/4 in Monoflex U-pack well screen, 0.010 inch slot size, ten feet in length and prepacked with 20/40 grade silica sand; or, a 2 in, 0.010 inch slot size, ten feet in length schedule 40 PVC well screen;

- If a pre-packed screen is not utilized, an artificial filter pack shall be placed in the annular space between the borehole wall and the screen. The filter pack material shall be chemically inert and installed in a manner that prevents bridging and particle-size segregation. At least two inches of filter pack material should be installed between the well screen and the borehole wall.

- Casing and screen material are to be decontaminated prior to installation to

remove any coatings or manufacturing residues. Decontamination includes a wash with a mild non-phosphate detergent/potable water solution and a rinse with potable water;

- Silica sand (20/40 grade) will be used to extend the filter pack to a length no greater than two feet above the top of the screen;

- A minimum of two feet of bentonite, either granular, pellets, or chips shall be placed around the casing by means of prehydrating at the surface and pumping through a tremie pipe. The bentonite seal is to be allowed to completely hydrate, set or cure in conformance with the manufacturer's specification prior to installing the grout seal in the annular seal;

- The annular space above the bentonite seal is to be filled with a neat cement containing bentonite from 2% to 6% by weight or a combination thereof;

- Wells will be constructed with a 4' by 4' concrete pad with (4) 6" steel bumper posts placed on the corners of the pad; and,

- Wells will be constructed with lockable steel well covers.

All wells shall be properly developed to ensure the collection of representative groundwater samples. All water removed from the wells shall be containerized until analyses are received from the lab, at which time it shall be disposed of appropriately.

The integrity and condition of each well shall be inspected quarterly during sampling activities. This shall be noted in the field notebook and sample collection record form. Any activities related to well maintenance shall also be recorded in the

aforementioned records.

7.3.4. Protection and Identification of Wells

Wells will be protected from damage by constructing a 4' x 4' concrete pad with (4) 6" steel bumper posts on the corners of the pad. Lockable steel well covers, 4" x 5' in size, shall be also be utilized.

All wells shall be surveyed to determine their location as well as their distances from the spill area and their distance from each other. These locations shall be surveyed by a licensed professional surveyor (or equivalent) within +/-0.01 foot in relation to mean sea level, which in turn is established by reference to an established National Geodetic Vertical Datum. The surveyed reference mark shall be clearly and permanently marked on top of the inner well casing.

The well identification numbers, monitor point number, shall be clearly and permanently marked on the outside of the protective cover.

7.3.5. Well Replacement

A monitoring well will be replaced if it is damaged, if it does not consistently produce a sample, or if there are problems attributable to well construction. If a well is replaced, all conditions specified in Attachment E to the DRAFT IEPA RCRA Closure Guidance Document dated November 1994 as well as Ill. Admin. Code Part 920 will be followed.

7.3.6. Well Plugging and Abandonment Procedures

At such time a well must be plugged or abandoned, the Agency shall be notified and such activities shall be executed in accordance with 77 Ill. Admin. Code 920.120 (b) (7) by grouting from the bottom up with a tremie pipe using neat cement containing bentonite from 2% to 6% by weight or combination thereof. This material shall be applied the full depth of the well and terminate within three feet of the ground surface. Final three feet shall be filled with premix concrete to the surface. Monitor Well Reports shall be submitted to the Illinois Department of Public Health within 30 days after monitor wells have been completed on forms as are prescribed and furnished by the Department. Boring logs and monitor well completion reports shall be submitted as part of the report of findings for this Phase I investigation.

7.4. Sampling and Analysis Plan

Please refer to Attachment 9 4 which contains the Sampling and Analysis Plan.

7.5. Parameters

Since the groundwater monitoring proposed herein pertains to the zinc oxide spill, Chemetco is proposing to sample shallow groundwater for ~~indicator parameters, the eight RCRA metals, zinc, and hexane soluble oil and grease as listed below:~~ the inorganic constituents of 35 Ill. Adm. Code Part 620, except for radium 226 and 228, beryllium,chloride, cobalt, cyanide, nitrate as N, and thallium. Chemetco has completed a waste analysis of the zinc oxide and concludes the parameters

mentioned above, organics, semi-volatile organics and hexane referenced in 620.410 were not found to be present in the waste stream. Refer to Section 3.3 of Attachment 4- Sampling and Analysis for a discussion of the waste analysis conducted. Chemetco proposes to sample for the following parameters:

- pH;
- Specific Conductance;
- TOX;
- TOC;
- Lead;
- Cadmium;
- Copper;
- Nickel;
- Zinc;
- Arsenic;
- ~~Barium;~~
- Silver:
- Mercury;
- Selenium; and,
- Chromium
- Antimony
- Boron

- Fluoride
- Iron
- Manganese
- Sulfate
- Total Dissolved Solids (TDS)
- ~~Hexane soluble oil and grease.~~

If any of the aforementioned constituents are present above the applicable Ill. Admin. Code Part 620 groundwater quality standards, confirmation sampling shall be initiated. If additional sampling confirms elevated concentrations, Chemetco will propose ~~a Phase II investigation related to groundwater.~~ to continue to sample for those constituents for three additional quarters. A report will be submitted to the IEPA upon completion of four quarters of monitoring.

7.6. Conclusion

The purpose of the Phase I groundwater investigation contained in Section 7 is to determine the presence/absence of hazardous constituents in shallow groundwater related to the zinc oxide spill. Subsurface borings, a properly constructed monitoring well system and water quality analyses will allow such a determination.

A Phase I Report shall be prepared by Chemetco to be submitted to the Agency and at a minimum will include the following information:

- Boring logs;
- Well completion reports;

- A description of the geology/hydrogeology in the vicinity of the zinc oxide spill;
- Two scaled geologic cross-sections with the interval over which the wells are screened clearly marked;
- An appropriately scaled map which shows the locations of borings, surface features, property boundaries, roads, spill area, etc.;
- Results of water quality analyses;
- Results of any hydraulic conductivity testing; and,
- Determination of groundwater class pursuant to 35 Ill. Admin. Code Part 620.

At such time as the results from the Phase I investigation indicate that further action related to groundwater is necessary, Chemetco shall propose additional investigation including a Phase II and/or Phase III investigation, as appropriate.

8.0 Remediation Costs

The remediation costs presented here have been estimated using vendor quotes. The total remediation costs for the zinc oxide spill area is ~~$ 108,302.~~ This estimate includes costs for the remedial activities listed in Section 5 and the Sampling and Analyses listed in Sections 6 and 7. Table 8-1 summarizes these remediation cost estimates.

TABLE 8-1
REMEDIATION COST ESTIMATES
CHEMETCO, INC.

ACTIVITY	UNIT	QUANTITY	UNIT COST[1]	TOTAL COST
Dewater Cont. Areas 1 & 2	Gal.	856,000	.0034	$ 2910
~~Load ZnO & Transport to Bunker~~	~~Cu. Yd.~~	~~1,500~~	~~8.27~~	~~$ 12,405~~
~~Remove & Transport Soil From Ditch to Bunker~~	~~Cu. Yd.~~	~~106~~	~~44.46~~	~~$ 4,713~~
~~Scrape 6" Soil From Cont. Areas 1 & 2 to Bunker~~	~~Cu. Yd.~~	~~1,268~~	~~10.66~~	~~$ 13,517~~
~~Remove & Transport Soil From Under Rock Road to Bunker~~	~~Cu. Yd.~~	~~37~~	~~219.35~~	~~$ 8116~~
~~Remove & Transport Berms to Bunker~~	~~Cu. Yd.~~	~~400~~	~~22.10~~	~~$ 8840~~
MW Installation	Linear Ft.	80	32.71	$ 2,617
MW Sampling & Analysis[2]	Sample	~~84~~	~~297.25~~ 345	~~$ 2,378~~ 1,380
ZnO Treatment	Ton	?	33.50	?
Disposal and Transportation	Ton	?	21.00	?
EXCEL Environmental mixing, equipment, decon	Ton	?	7.85	?
Soil Sampling & Analysis	Sample	~~35~~ 84	~~527.5~~ 446	~~$ 18,463~~ $37,464
~~Equip. Decontamination~~	~~Man Hrs.~~	~~90~~	~~48.39~~	~~$ 4,350~~
Engineering Oversight	Man Hrs	230	65	$14,950
Final Report & P.E. Cert				$ 5,000
Subtotal				~~$ 83,309~~
~~20% Contingency~~				~~$ 16,662~~
~~10% Administration~~				~~$ 8,331~~
TOTAL COST ESTIMATE				~~$108,302~~

[1] ~~Unit costs include labor, equipment, trucking, and engineering oversight~~

[2] MW sampling will occur during regularly scheduled groundwater monitoring events, therefore mobilization costs have been omitted. Costs provided for the first quarter only since constituents for subsequent quarters is unknown at this time.

Financial assurance will be provided by Chemetco initially for those costs which are known. Since additional investigation is required to determine the extent of contamination, Chemetco proposes to provide financial assurance for the remainder of the costs after the investigation is complete. Initially costs will be provided for:

• Dewater Containment Areas 1 and 2	$ 2,910
• Monitoring Well Installation	$ 2,617
• MW Sampling & Analysis	$ 1,380
• Soil Sampling & Analysis	$37,464
• Engineering Oversight	$14,950
• Final Report	$ 5,000
Total Known Costs:	$64,321

9.0 Schedule for Remediation

TABLE 9.1
REMEDIATION SCHEDULE*
CHEMETCO, INC.

# of Days	0	15	30	45	60	75	90	105	120	135	150	165	180
Event													
Dewatering Completed	■	■											
~~Removal of ZnO to Bunker Completed~~ ZnO treatment			■	■									
Soil Sampling Completed					■								
Installation of Mon. Wells Completed						■							
P.E. Cert. & Final Report							■	■	■	■	■	■	■

~~* Mobilization will be completed within 60 days of completion of the stormwater retention basin or approval to discharge by the Bureau of Water.~~

* Time frame begins upon approval by the IEPA. The report listed in Special Condition #9 of the IEPA's June 10, 1998 closure plan approval letter (Site Characterization Report) will be submitted by June 1, 2000. Closure activities will be completed by December 15, 2000. Certification of completion of closure to be submitted by February 15, 2001. Proposal for monitoring wells locations to be submitted by June 1, 2000.

10.0 Certifications & Statements

During the remediation activities, an independent, registered professional engineer will conduct periodic inspections to ensure that all critical activities are completed adequately and in accordance with the approved Remediation Plan. Within sixty (60) days of completion of remediation, Chemetco will submit by registered mail to the Administrator of USEPA Region V and the Director of the IEPA, a certification by Chemetco and an independent professional engineer registered in the State of Illinois that the facility has been closed in accordance with the approved remediation plan. The certification will be signed by a responsible corporate officer, or duly authorized representative, and will contain the certification statement required under 35 Ill. Adm. Code Subtitle G, Section 702.126.

Chemetco will be attempting clean closure of the spill area. Remediation of the spill area is only a partial closure of the facility. Units remaining at the facility which are undergoing closure include the former floor wash impoundment; zinc oxide lagoons; cooling water canals; former zinc oxide pile and the zinc oxide bunker. Chemetco will continue to generate hazardous waste and store more than 1,000 kg/month for less than 90 days.

Stormwater – Outside the fence

Chemetco built a new 1,000,000 million gallon storm water retention basin in 1998. The retention basin was built pursuant to the 1997 Storm Water Pollution Prevention Plan (SWPPP) as part of the stormwater collection upgrades to the facility. Currently, this basin only receives water from a concrete ditch adjacent to and south of Oldenburg Road that collects water from the very southeast corner of the facility. Run off from this southeastern portion of the facility has been monitored, in the past, by NPDES discharge Outfall 002. Currently, storm water is collected in the north-south and east-west storm water canals and is used as make up water in the plant with the exception of a small amount of rainfall which runs off the slag pile to the north and east. Eighteen inch plastic piping has been laid just outside the northeast and eastern fence lines to collect storm water run off from the slag which cannot be collected by current storm water ditches and sumps within the fence. A dirt berm has also been built along the drainage pipe to divert run off from the adjacent field. The pipe was laid in late 1999 and is currently collecting and directing water to the new retention basin away from the storm water collection line. These are the only two sources of water for the new retention basin. Once the dirt has settled along the east and north pipes, concrete aprons will be poured surrounding the water collection ports to more efficiently direct the flow of water to the collection points.

The two areas which still require attention, i.e. stormwater collection, are the truck parking lot and the scale. Stormwater that collects in the scale is transferred to the concrete ditch along the west side by a portable pump. A proposal for a stormwater collection system around the truck lot has been conceptualized and is captured on the revised map contained in the SWPPP. This additional upgrade cannot proceed until settlement of the parking lot is obtained.

Stormwater – Inside fence

The stormwater collection system inside the fence consists of the following sumps inside the fence:

1. The northwest sump;
2. The southwest sump at the mobile shop;
3. The southeast corner of the bunker;
4. The southeast sump;
5. The northwest corner of the bunker; and,
6. The sump at the scale is manually pumped to the stormwater ditch which runs to the northwest corner of the sump.

The northwest sump and the northwest sump at the bunker empty into the north canal but can be rerouted to the East Canal, if necessary. The southwest sump at the mobile shop, southeast corner of the bunker, and the southeast area of the plant empty into the east canal but can be rerouted to the North Canal, if necessary. Prior to July of 1999, all of the sumps emptied into the East Canal. The rerouting of the water pathways from the sumps to the respective canals was a necessary water management activity to allow greater flexability to prevent flooding.

Reuse of Stormwater

Approximately 60,000 gallons/day of water is utilized from the East Canal in Chemetco's Foundry Cooling Tower and pollution control systems. Approximately 80,000 gallons/day are utilized from the North Canal and the Retention Basin in the Casting Wheel Cooling Tower and the Slag Granulation Barge.

The East Canal decants into the West Canal and the West Canal is utilized as makeup water in the Foundry Cooling Tower and pollution control system. The South Canal can be sent to either the North or East Canal. The South Canal receives surface water run off only.

The deep well(s) are utilized only as emergency make-up water in the Foundry Cooling Tower, Casting Wheel Cooling Tower and the pollution control system.

8,000E
9,000E
11,000E
10,000N
9,000N
8,000N

SLAG
PUMP WELL
FINES BUILDING
DIS
CONCRETE
PONDS
FOUNDRY
MATERIAL STORAGE (SCRAP METAL)
<90 DAY HAZARDOUS WASTE STORAGE
SANITARY WASTE TREATMENT
BAILERS
MURATIC ACID
ABOVE GROUND DIESEL FUEL STORAGE
MAINTENANCE CHEMICAL STORAGE
ELECTROLYTE STORAGE
EMPLOYEE PARKING LOT
LOADING DOCK
PROPOSED TRENCH DRAIN
FILL PILES
TRUCK PARKING LOT
PROPOSED BERM
CONCRETE DITCH
ONEMILLION GALLON RETENTION BASIN
CONTAINMENT #1
CONTAINMENT #2
CONTAINMENT #3
CONTAINMENT #4
GRAVEL ROAD
TRIBUTARY OF LONG LAKE
DIVERSION CHANNEL
CULTIVATION
8" PVC F.L. 409.63N. F.L. 409.48S.
8" PVC F.L. 410.33N. F.L. 410.81S.
H-11 429.9
H-12 429.1
H-3 427.7
H-2 427.6
H-5 411.7
E.439.04
E.746
E.750

OIL STORAGE AREAS
1. SOUTH MAINTENANCE SHOP
2A. MOBILE MAINTENANCE SHOP
2B. MOBILE MAINTENANCE SHOP
3. ABOVE GROUND DIESEL FUEL STORAGE
4. MAIN COMPRESSOR ROOM
5. TANK HOUSE
6. SLAG SCREENING
7A. ROTOFILTER ROOM
7B. ROTOFILTER ROOM
8. HYDRAULIC ROOM FOR FOUNDRY
9. CASTING WHEEL
10. OTTOKOMPU ROOM
11. MAIN PUMP HOUSE
12. DIS COMPRESSOR ROOM
13. SLAG GRANULATION

MONITOR WELL LOCATIONS
STORMWATER DRAINAGE, SUMPS, DITCHES
PHASE II DITCHES (1999)
DRAINAGE DIRECTION
PHASE III
IMPERVIOUS

LEGEND
Sign
Pipe
Wall
Power Pole
Light
Trees
Water
Building
Road
Drainage Channel
Underground Drainage Piping
Fence
Rail Road
Index Contour
Intermediate Contour
Depression Contour
Supplementary Contour
Spot Elevation
Control Point
Dashed Contours Maybe Unreliable

SCALE IN FEET
100 0 100 200

CHEMETCO P.O. BOX 67 · HARTFORD, ILLINOIS 62048
1-800-254-4381

STORM WATER MANAGEMENT MAP
IN SECTION 15 AND 16, T.4N., R.9W., 3RD P.M.
CHOUTEAU TOWNSHIP, MADISON COUNTY, ILLINOIS

SMS ENGINEERS
Sheppard Morgan & Schwaab, Inc.
CONSULTING ENGINEERS & LAND SURVEYORS

January 30, 1998

Mr. David W. Schulenberg
Senior Enforcement Officer
Watershed and Non-Point Source Programs Branch
Water Division
Region V
U.S. Environmental Protection Agency
77 West Jackson Boulevard (WW-16J)
Chicago, Illinois 60604-3590

Re: Amended Restoration Plan
Chemetco - Parking Lot Area
Hartford, Illinois
EMT No. 97-3428
SCI No. 98-2028

Dear Mr. Schulenberg:

1.0 INTRODUCTION

As wetland consultant for Chemetco, Inc. (Chemetco) SCI Engineering & Materials Testing, Inc. (SCI) prepared and submitted a Restoration Plan, dated November 26, 1997, in accordance with the Enforcement Order (Order) dated September 24, 1997. This Amended Restoration Plan includes additional information requested by the United States Environmental Protection Agency (USEPA) in a response letter dated January 5, 1998. For your convenience, new information appears in **underlined form** throughout the report. Only the text is included; for specific reference information, please see attachments to the original report.

SCI has researched the conditions on the subject site through on-site field surveys, review of historical aerial photographs and slides, review of testimony of local individuals, review of cropping history, and other available data. As a result of this research, SCI contends that 4.08 acres, rather than 8.0 acres of wetlands were impacted by the addition of fill for the truck parking lot. Therefore, the following Restoration Plan offers several alternatives designed to achieve the best possible solution to the Order.

This report details the conditions that currently exist on-site, and provides evidence to support the position that wetlands did not exist on the subject site prior to the construction of the Chemetco facility. The Restoration Alternatives section describes three possible solutions for restoration, as required by the Order, including removal of the entire parking lot, removal of only the portion of the parking lot that lies within the wetland, and on-site mitigation to offset the wetland impacts.

A summary of aerial photographs reviewed can be found in Appendix A. Appendix B contains a brief photographic summary of existing conditions. Exhibit A is a representative portion of a recent topographic survey of the parking lot area, and Exhibit B is a recent aerial photograph of the subject site.

SC070

1. Existing Conditions

The subject area (Figure 1) is a semi-truck parking lot created by the deposition of fill material. The area of the lot is approximately 8.0 acres, as stated in the Order. The area of the parking lot as measured by SCI on a 1996 aerial photo of the site is approximately 8.25 acres. The fill material consists of concrete rubble and slag, and meets the "clean fill" definition of the Illinois Environmental Protection Agency. Some concrete washout has been deposited in an area along the west side of the parking lot as a result of cleaning concrete mixing truck tanks. On October 23, 1997, SCI conducted a field investigation south of the parking lot to determine the vegetative community types and extent of wetlands in the area. The Wetland Determination Data Forms are included in Appendix C. A young, forested wetland exists south of and adjacent to the parking lot. This wetland is dominated by green ash, goldenrod and sedges. South of the wetland area, there is a gradual rise in elevation to a non-wetland area, then a gradual decrease to Long Lake. The low area where the wetland now exists was likely a wide, shallow swale within the agricultural field, which drained southeast to Long Lake.

The subject wetland was most likely created by the alteration of hydrology associated with the construction of the Chemetco facility and the original addition of fill (1.25 acres in 1983 photo) for the parking lot. The increased runoff from the additional 52 acres of paved areas and buildings is primarily responsible for the formation of the wetland at the existing parking lot's toe slope, as evidenced by the 1983 aerial photo. The combination of increased runoff and the physical barrier of the parking lot fill is likely to have created the conditions necessary for the wetland to form. According to SCI's research, the wetland began forming after the construction of the Chemetco facility in 1970, and the subsequent addition of the parking lot fill. Therefore, the parking lot impacted less wetland acreage than is claimed in the Order.

The Order states that 8.0 acres of wetlands have been filled. SCI believes that up to 4.08 acres of wetlands were impacted by the addition of fill material for the parking lot. This is based upon the following:

1. A wetland boundary line (Exhibit A) was determined by SCI, based upon a 10-year review of aerial slides available from the Natural Resources Conservation Service (NRCS) in Madison County, Illinois. Mr. Jerry Berning of the NRCS in Madison County assisted with this review, albeit in an unofficial capacity, due to the non-agricultural status of the subject site (the zinc oxide spill area). The determination was made based upon the appearance of dark or wet areas on the slides, as well as changes in the vegetation, and included areas adjacent to the spill site.

   The wetland boundary line corresponds approximately to the boundary between the Nameoki (to the north) and Darwin (to the south) soil types in the area (Figure 2). Darwin soils, but not Nameoki soils, are included in the Hydric Soils of the United States list. However, Nameoki soils do appear on the Madison County hydric soils list in certain areas, such as where Darwin soil inclusions appear in bottomland depressions and swales. The relatively uniform rise in elevation to the north from the wetland boundary line indicates that the area is not depressional. Therefore, we do not believe Darwin inclusions existed north of the SCI wetland boundary line.

   The boundary line also corresponds approximately to the northern boundary of the emergent wetland identified on the National Wetlands Inventory (NWI) Map (Figure 3).

2. Aerial photographs from the years 1941, 1955, 1968, 1972, 1974, 1978, 1983, 1988, 1992, 1994 and 1996 were reviewed (Appendix A). The photos show that the area of the parking lot was farmed consistently and successfully prior to 1978. The consistent farming indicates that wet conditions did not exist in that area during that period.

3. The reviewed aerial photos indicate that the parking lot was started between 1978 and 1983. The 1983, 1992 and 1996 photos show some dark tone in the area south, east and southeast of the parking lot, indicating possible wet conditions in that area. The darkest tone appears in the area east and southeast of the parking lot.

4. Review of the cropping history (Appendix D) reveals that the field in the area of the subject site was not cropped from 1981 to 1997. The data gathered are a composite of records obtained from the Agricultural Stabilization and Conservation Service (ASCS) and testimony from Mr. Dave Mueller, who has farmed the land for several decades. The abandonment of the land by the farmer allowed the natural vegetation to re-establish in that area. A 1978 aerial photograph shows the field as idle, which suggests that cropping ceased sometime between 1974 and 1978.

5. Testimony from Mr. Mueller indicated that no wetlands existed on the subject site during the period when it was farmed. Mr. Mueller said that he never had a problem farming the field due to wet conditions. He said that he had quit farming the field when the parking lot was started because he was unable to conveniently access the site. On January 27,1998, Mr. Mueller indicated that no hydrologic modifications (including ditching and drain tiling) were made to the subject site during the time he has farmed it. He said that the field naturally drained overland to the southeast and into Long Lake. This information corresponds with SCI's observation on the aerial photos of a wide swale area draining into Long Lake.

6. The hydrology of the subject area has been altered over time by the Chemetco facility and the addition of fill to the parking lot. The normal absorption of rainwater and runoff is prevented by the approximately 44 acres of pavement and buildings of the Chemetco facility, as well as the 8.0 acres of parking lot, which now occupy former agricultural land. This is evidenced by the appearance of dark tones in the subject area only in photos taken after the construction of the Chemetco facility and parking lot (1978-present).

2.0 RESTORATION ALTERNATIVES

2.1 Restoration of 8.0 Acres of Wetland

This alternative is based upon the assumption that the entire area of the parking lot lies within wetlands. It would require that all fill material be removed, restoring the area to its former elevation and function.

Since a detailed topographical survey of the area was not done prior to the addition of fill, it is not possible to identify the former contours. The restoration would best be accomplished by removing the existing fill completely, exposing the soil. In addition, it would be necessary to remove approximately the top 12 inches of soil due to severe compaction and replace it with similar soil. It may also be necessary to perform further remedial action, such as "deep-ripping", to restore soil permeability.

The restored wetland will be seeded with a high diversity of plant species. A suitable seed mix will be developed for the conditions predicted in the restored wetland. The area will be disked and seeded by hand or with a mechanical seeder. The area will then be lightly compacted to distribute the seeds within the soil and to prevent erosion. The seeding will occur in the spring or fall to promote the highest germination rates. The sites may also be mowed, if necessary, to reduce the competition of non-wetland plant species.

A seed mix containing many types of plants will provide the greatest chance for successful planting. It is impossible to accurately predict the environmental conditions for a wetland each year. Therefore, a seed mix with a high diversity of species will likely contain some seeds, which could germinate under the site's changing conditions from year to year. The restored wetland will be planted with a seed mix containing seeds from as many of the following plants as possible.

blunt spikerush	common boneset	rough bluegrass
soft rush	rice cutgrass	Japanese millet
monkey flower	common sneezeweed	riverbank wild rye
fox sedge	Pennsylvania smartweed	bearded sedge
ditch stonecrop	hollow Joe-pye weed	reed canary grass
wool grass	broadleaf waterplantain	wild celery
blue vervain	blue flag iris	giant golden-rod
saw-tooth sunflower	purslane speedwell	water willow
yellow fruited sedge	cord grass	Canada wild rye
barnyard grass	arrowhead	pickerelweed
cardinal flower	sweet flag	swamp milkweed
Turk's-cap lily	marsh blue violet	black-eyed Susan

When the wetland is completed, more than 50% of the vegetation will be composed of hydrophytic species (facultative or wetter). More than 75% of the total relative plant cover will also be hydrophytic.

A five-year monitoring program will be implemented following the restoration of the wetland. Vegetation will be sampled, and hydrology will be verified to ensure all anticipated requirements of the restored wetland are met. Random sampling procedures will be used to assess the progress in the wetland. Yearly monitoring reports will be prepared and submitted to the COE. Suggested corrective measures will be included in the reports for any problems that may develop. Corrective measures will be taken at the COE's instruction to improve any failing component of the restored wetland.

Costs for this alternative are estimated as follows:

Cost Estimates for Full Restoration (8.0 acres)

Item	Estimated Cost
Removal of 8.0 acres of concrete and slag fill, approximately 7-10 feet thick	
Off-site disposal	93,000 Cubic Yards (CY) @ $13.85/CY = $1,288,050
On-site disposal	93,000 CY @ $11.75/CY = $1,092,750
Removal of top 12" of soil material	12,906 CY @ $2 CY = $25,812
Replacement of top 12" of soil material	12,906 CY @ $2 CY = $25,812
"Ripping" soil to restore permeability	$4,000
Seeding with wetland species mix	8.0 acres @ $265/acre = $2,120
Consultation & labor for revegetation	$1,000.00
Monitoring fees	$1,200 per year for 5 years = $6,000

Total Cost Estimate for Off-Site Disposal $1,352,794
Total Cost Estimate for On-Site Disposal $1,157,494

The estimated schedule for the project is as follows:

Estimated Schedule for Full Restoration (8.0 acres)

Month	Activity
0-3	Solicit bids, choose contractor, begin removal
3-6	Complete removal of fill material
6-7	Complete removal of underlying compacted soil layer
7-10	Restoration of soil permeability and replacement of soil layer
10-16	Revegetation of wetland
16-36	Adjustments to vegetation, hydrology, if necessary
36	Project completion
Year	
1-5	Monitoring period

This alternative is not the preferred alternative for the following reasons:

1. According to SCI's research, the parking lot does not lie entirely within a wetland; therefore, the entire parking lot should not be removed.

2. The fill material covers 8.0 acres to a depth of approximately 7-10 feet for a total of approximately 93,000 cubic yards. The weight of this concrete rubble fill is estimated to range from 146,000 to 177,000 tons. This weight is sufficient to produce compaction in the underlying soil that would severely reduce its permeability preventing the normal recharge of groundwater through the wetland basin. In a heavy clay soil of the type found in the subject area, it would be nearly impossible to reverse these compacted conditions. In order to construct a properly functioning wetland, it would be necessary to completely remove the compacted soil and replace it with soil borrowed from another area. Placement of the fill soil would require special equipment to minimize compaction. Soil structure would still be weak, at best. Weak structure limits the permeability of the soil. The great expense and complexity of this plan would not be justified by the potential quality of the resulting wetland.

2.2 Restoration of 4.08 Acres of Wetland

This alternative would involve the removal of only the portion of the parking lot that lies within a wetland as defined by SCI's wetland boundary line. The restoration method and monitoring requirements would be the same as that described in the previous alternative.

Costs for this alternative are estimated as follows:

Cost Estimates for Partial Restoration (4.08 acres)

Item	Estimated Cost
Removal of 4.08 acres of concrete and slag fill, approximately 7-10 feet thick	
Off-site disposal	55,950 Cubic Yards (CY) @ $13.85/CY = $774,907
On-site disposal	55,950 CY @ $11.75/CY =$657,412
Removal of top 12" of soil material	6,581 CY @ $2 CY = $13,162
Replacement of top 12" of soil material	6,581 CY @ $2 CY = $13,162
"Ripping" soil to restore permeability	$2,000
Seeding with wetland species mix	4.08 acres @ $265.00/acre = $1,081
Consultation & labor for revegetation	$800
Monitoring fees	$1,200 per year for 5 years = $6,000

Total Cost Estimate for Off-Site Disposal $811,112
Total Cost Estimate for On-Site Disposal $693,617

The estimated schedule for the project is as follows:

Estimated Schedule for Partial Restoration (4.08 acres)

Month	Activity
0-3	Solicit bids, choose contractor, begin removal
3-6	Complete removal of fill material
5-6	Complete removal of underlying compacted soil layer
6-8	Restoration of soil permeability and replacement of soil layer
8-14	Revegetation of wetland
14-36	Adjustments to vegetation, hydrology, if necessary
36	Project completion
Year	
1-5	Monitoring period

This alternative, although less extensive than the removal of the entire parking lot, is also not feasible due to its cost, complexity, and low chance of successful restoration.

2.3 Mitigation

Based on the extremely disturbed state of the wetland under the parking lot, losses would be best compensated with a constructed mitigation site. The Chemetco property contains several low-lying areas found in agricultural fields adjacent to Long Lake, which exhibit high potential for a successful mitigation site.

Chemetco proposes to excavate two areas totaling 8.16 acres to provide a 2:1 compensation ratio for the maximum figure of 4.08 acres of wetlands impacted by the parking lot. A range of 1 to 10 feet of overburden soil (depending on topography) will be removed from the agricultural fields to create a bottom elevation in the basins between 409.0 and 410.0. Each constructed wetland will be deed-restricted with a conservation easement following construction.

The water level of Long Lake is at elevation 409.0. Several farmed wetlands adjacent to Long Lake exist at elevations of 409.2 to 411.3. Therefore, a constructed wetland adjacent to Long Lake and excavated to 409.0 to 410.0 will receive a sufficient amount of groundwater to support hydrophytic vegetation. A water control structure will be installed in each wetland in order to retain a maximum of 18 inches of water. The wetlands will also receive overland flow via grassed waterways to supplement hydrology.

Each basin will be constructed with sideslopes no steeper than 3h:1v. The bottom of the basins will be undulating to provide a range of habitats. Islands can be created within the wetlands to provide nesting sites for waterfowl and other species. The topography within the wetlands will not vary more than 2 feet. The soil in the basins should be low permeability clay. There appears to be enough clay on site, but further testing should be done to confirm the quantities.

The constructed wetlands will be revegetated, completed and monitored in the same manner as described previously for the restored wetland.

CSD Environmental Services, Inc.

SUBSURFACE INVESTIGATION OF SEMI - TRAILER PARKING LOT AT CHEMETCO, INC.

PREPARED FOR:

1198010003 - Madison County
Chemetco, Inc.
Route 3 and Oldenburg Road
Hartford, Il
ILD 048843809

April 27, 1998

2220 Yale Blvd., Springfield, IL 62703 • Phone 217-522-4085 • FAX 217-522-4087

Table of Contents

Figures

Attachments

Chemetco, Inc.
Subsurface Investigation
Semi-Trailer Parking Lot
April 27, 1998

1.0 Introduction

Chemetco has agreed to conduct a subsurface investigation of the semi-trailer parking lot to assure the USEPA that no deposition of waste materials has occurred beneath the parking lot. This subsurface investigation report describes the activities associated with determining the presence or absence of waste materials in the fill of the truck parking lot.

2.0 Facility Identification

The Chemetco facility was constructed in 1969 and commenced production of anode copper, cathode copper, crude lead-tin solder, zinc oxide and slag in 1970. The Chemetco facility is located within a primarily agricultural, light residential area south of Hartford and is bounded on the west by major, heavily traveled rail and highway routes and on the south by a limited use secondary road. More specifically, the 200+ acre plant site is in the Southeast 1/4, Section 16, Township 4 North, Range 9 West of the Third Principal Meridian, in Madison County (see Figure 2-1).

3.0 Location of Truck Parking Lot

The truck parking lot is located south of Oldenburg Road on Chemetco property. The truck parking lot comprises an area of approximately 8.0 acres. The parking lot was constructed with fill material consisting of concrete rubble and slag, and meets the definition of "clean fill" pursuant to Section 3.78 of the Act. The western edge of the parking lot was used as a wash out area for concrete trucks resulting in deposition of concrete in this area. The depth of the fill across the lot ranges from an estimated seven to ten feet. Refer to Figure 3-1 for a site map showing the location of the truck parking lot.

4.0 Subsurface Investigation

Due to the nature of the fill, drilling through the parking lot using a drill rig is not feasible. Chemetco proposes instead to excavate test pits to native soil in six different locations of the parking lot. The test pits will be labeled TP-1, TP-2, TP-3, TP-4, TP-5 and TP-6. Refer to Figure 4-1 for the test pit locations. Two test pits are proposed in the area of the original truck lot. No test pits are proposed for the middle of the original truck lot since this area is currently used by Chemetco for semi-trailer parking. Excavation in the middle of the original truck lot would be difficult due to limited

parking space for the semi-trailers.

The parking lot was expanded in recent years to the south of the original truck lot. This area was filled with broken concrete removed from the plant. Minor amounts of slag may also be present. Four test pits locations are proposed in the expansion area to evaluate the absence or presence of any waste materials.

4.1 Sampling Procedures

A geologist will be present during excavation activities to log the results of the test pits. A field notebook will be maintained by the geologist which contains the date, weather conditions, test pit number, time, and types and depths of fill material encountered during excavation, depth of the excavation, and depth of any samples collected.

If waste materials are noted to be present by the geologist a sample of the material will be collected for laboratory analysis. Sample collection for laboratory analysis will follow the procedures provided in Section 4.2. Compaction data will be collected from test pits TP-2, TP-4, and TP-5. A certified soil classifier will examine all soil horizons in the test pit. Soil properties such as thickness, texture, structure, color consistence will be recorded. Based on these physical properties, permeability will be estimated. These soil logs will be included in a final report. Refer to Figure 4-1 for the location of the test pits.

4.2 Analytical Procedures

All samples sent for chemical analysis will be analyzed using SW-846 methods by Prairie Analytical Systems, Inc. located in Springfield, IL. Samples taken shall achieve the practical quantitation limit (PQL) identified in SW-846 (Third Edition). Samples will be analyzed using USEPA SW-846 method 9045 for pH, TCLP method 6010A for lead, cadmium and zinc. These analytical parameters were selected based on knowledge of the types of waste streams generated at Chemetco.

4.3 Sample Identification

If analytical samples are collected a numbering system will be used to allow

tracking, retrieval, cross referencing of sampling information and positive identification. Each sample submitted for chemical analysis will be assigned a unique sample identification number. The samples will be numbered as identified below:

TP-#-#

For example, TP-1 will identify the sample as being derived from test pit location 1, sample #1.

4.4 Sample Labeling

Sample labels will be affixed to each sample at the time of collection. The label will include the following information as a minimum:

- Sample identification number;
- Date sampled;
- Time sampled; and
- Person sampling.

In addition, each person involved in the sampling activity will record the above information, as well as comments regarding sampling, in a field log book and on the chain of custody form.

4.5 Sample Shipment

Each sample will be placed into individual laboratory provided glass jars. Samples will be placed carefully in coolers for storage and shipment. Since only metal analysis is being proposed, the samples need not be kept cool on ice. Each cooler will be provided with a chain-of-custody form. Attachment 1 illustrates a typical chain-of-custody form.

All environmental samples for analytical testing will be hand delivered or shipped overnight to Prairie Analytical within 24 hours after sampling to allow completion of analyses within the specified holding times.

4.6 Decontamination Procedures

In order to minimize the potential for cross-contamination between borings, equipment which may come in contact with the sample media will be decontaminated before sampling. In addition, all equipment will be decontaminated between samples. All rinse waters used for decontamination will be captured and containerized into 55 gallon drums. The rinse waters will be transported to the AAF scrubber ponds for disposal.

Reusable non-dedicated equipment (hand auger, split spoons, scoops, etc.) will be decontaminated between each sample and before removal from the site. The decontamination procedures for all sampling equipment will be as follows:

1. Soap wash (Alconox or equivalent) in hot water solution;
2. Potable water rinse;
3. Potable water rinse; and
4. Air Dry.

The equipment used to assist in the collection of samples will be decontaminated prior to and immediately after completion of the project. The equipment will be decontaminated using a high pressure hot water wash. A decontamination pad will be constructed of plastic sheeting and lumber. All rinse waters will be collected and transferred into a temporary tank by a portable pump. The rinse water will be transferred to the AAF scrubber ponds for disposal.

4.7 Quality Assurance/Quality Control

Quality Assurance/Quality Control samples will include a field blank. The field equipment rinse blank sample will be collected by pouring laboratory-provided distilled/deionized water over a decontaminated split spoon or hand auger. The field blank will be analyzed for lead, cadmium and zinc. A copy of the laboratory's QA/QC's procedures are provided as Attachment 2.

5.0 Subsurface Investigation Results

Following receipt of any analytical results and compaction test results, a final report

will be prepared summarizing the methods and results of the subsurface investigation. The report will contain information as outlined below:

- an area map will be prepared showing the test pit locations;
- field and laboratory methods will be outlined and laboratory analytical results will be reported;
- the nature and type (if any) of waste materials encountered will be reported.

6.0 Final Contours of the Semi-Trailer Lot

Chemetco proposes to extend the existing semi-trailer parking lot to the south. Refer to Figure 5-1 for the proposed final contours of the truck lot. The entire lot will be concreted and sloped at a 0.5% grade to allow stormwater drainage to the north. The north portion of the semi trailer lot will have to be reworked to reach the final grade. The south portion of the lot will require additional fill material to achieve the proposed 423 contour line. Clean fill in the form of concrete without any protruding rebar or wire mesh is proposed to be used.

Brick/Cadmium Debris Area

A Violation Notice , M-1997-00017, dated March 12, 1997 was received by Chemetco regarding the disposal of wastes in an area South of Oldenburg Road. CSD Environmental Services, Inc., sent a letter on behalf of Chemetco dated Aprill 14, 1997 to the Illinois EPA outlining Chemetco's compliance with the corrective actions included in the Violation Notice. CSD sent an update dated August 6, 1997, to the Illinois EPA outlining Chemetco's activities to comply included the following:

- All protruding rebar was removed from the concrete. The rebar was sent to McKinley Iron for recycling;
- Concrete was relocated in the truck lot;
- Freon was removed from white goods and the white goods were recycled by McKinley Iron;
- All general refuge and wood scraps were placed into the trash within the plant;
- Scrap metal/copper was separated and transported to the plant for recycling;
- The full and or larger refractory bricks were hand picked from the pile and disposed of as hazardous waste at ChemMet; and,
- The residual materials (broken brick, gunning, etc.) are in two covered piles (eliminates storm water infiltration) at the north east corner of the parking lot.

Chemetco had also stated in the August 6, 1997, that they were researching treatment options for the remaining material. Since the date of this letter, amendments to the HSWA regulations have been finalized. Subpart S allows the establishment of a Temporary Unit (TU) to treat materials under a Remedial Action Permit (RAP). Chemetco submitted a DRAFT RAP application to the Illinois EPA in January for a TU to treat materials in the zinc oxide release area by Long Lake. Chemetco plans to treat the debris in the temporary unit with the same or similar treatment technology proposed for the material in the release area.

Chemetco is in the process of setting up a treatability study on the material under cover in the truck lot. A treatability study must be conducted on this particular material since it is a different consistency that the material in the release area. The material may need to be crushed prior to treatment.

Chemetco will submit a closure plan for the disposal area south of and adjacent to Oldenburg
Road.

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CHEMETCO SLAG ISSUES

Introduction

Pursuant to the letter dated February 14, 2000 from the Department of Justice re: United States v. Chemetco, it is alleged that Chemetco failed to determine whether certain lead-bearing, solid waste, in the form of slag stored at the facility, is a hazardous waste, in violation of 40 C.F.R. 262.11. Chemetco has historically considered the slag to be a valuable by-product as defined in 40 CFR 261.1(c)(3) which has already been characterized in 1988 (with agreement by the Illinois EPA) as not a RCRA hazardous waste based on the EP Tox test results for lead. Upon completion of the data evaluation, all three testing regimes authorized by Illinois EPA indicated that leachate from the slag did not exhibit a hazardous waste characteristic as set forth in a letter to Chemetco from Illinois EPA dated July 15, 1988. Since the slag has not been considered a waste, reclassification and speculative accumulation has not been a concern to Chemetco or any inspectors.

There are numerous regulatory issues raised by the allegation that the slag should be recharacterized. As stated above, the threshold issue is whether the material is, in fact, a solid waste subject to characterization. For example, as discussed below characterization is not required for Chemetco's intended use of the slag as an ingredient in the manufacture of cement. A second issue is the legal relevance that characterization has already occurred using EP Toxicity. A third issue is the development of a statistically relevant number of samples for the portion of the pile under consideration if a solid waste determination is made. A fourth issue is the selection of an analytical method in the event Chemetco determines to characterize some or all of the slag as a solid waste. The balance of the memorandum will discuss the two primary analytical methods available to the parties, TCLP (EPA method 1311) and SPLP (EPA method 1312) and the status of Chemetco's preferred use of the slag as an ingredient in the manufacturing of cement.

Discussion

Both USEPA and Illinois EPA have apparently selected the Toxicity Characteristic Leaching Procedure (TCLP) to determine if Chemetco's slag meets the definition of a hazardous waste pursuant to 40 CFR 261 and 35 Ill. Adm. Code Part 721, if the pile is considered a solid waste. Chemetco believes the use of the TCLP test is an inappropriate analytical method to evaluate the leaching potential of the slag. The slag pile, as it sits, in it's present condition bears no resemblance to the worst case conditions (mismanagement scenario) assumed as part of the TCLP test. Given Chemetco's worst case scenario for the slag is an on-site monofill and Chemetco can eliminate the mismanagement scenario, it is reasonable to assume that the slag will never be placed in a municipal solid waste (MSW) landfill subjecting the slag to an acidic environment derived from the decomposition of municipal waste (acetic acid) as TCLP assumes.

The courts have recognized that the TCLP test is not always the appropriate sampling methodology. *See, e.g., Edison Electric Institute, et al. v. United States Environmental Protection Agency*, 2 F.3d 438, 446 (D.C. Cir. 1993) ("the TCLP must bear some rational relationship to mineral wastes in order for the Agency to justify the application of the toxicity test to those wastes."); *Columbia Falls Aluminum Co. et al. v. Environmental Protection Agency*,

139 F.3d 914, 923 (D.C. Cir. 1998) ("An agency's use of a model is arbitrary if the model 'bears no rational relationship to the reality it purports to represent.' . . .We therefore conclude that EPA's use of the TCLP is arbitrary and capricious.").

EPA later concluded (see the Phase IV LDR preamble 5/16/98) that certain mineral processing wastes might be disposed with acidic-extraction and beneficiation wastes and therefore TCLP was still the most appropriate test for these materials. These concerns, however, do not apply where Chemetco's slag is in an environmental conditions not mimicked by TCLP.

The TCLP test, EPA Method 1311, was designed to simulate leaching of potentially hazardous constituents from co-mingled industrial hazardous waste in a municipal landfill. Under these conditions volatile organic acids, produced as a result of the anaerobic decomposition of municipal refuse, react on the co-disposed industrial solid waste and mobilize potential hazardous constituents. Although the TCLP test does a reasonable job of mimicking the municipal refuse landfill situation, the test consistently exaggerates the leachability of materials located in a setting other than a municipal landfill. The main factor determining the mobilization of constituents in the materials, particularly metals, is heavily influenced by the pH and the organic acids used in the TCLP test. The organic acids used in the test are absent, or are in a greatly reduced concentration, from most environments that do not include municipal refuse. The relative immobility of lead in subsurface soils under non-highly acidic conditions, and its increased mobility under conditions of higher acidity, has been well documented. There is no reason to assume that the slag residing at Chemetco would be placed in a municipal waste landfill, thereby, negating such a "mismanagement scenario" and, consequently, negating the relevancy of TCLP.

The Science Advisory Board of the United States Environmental Protection Agency (U.S. EPA) in its report "Recommendations and Rationale for Analysis of Contaminant Release by the Environmental Engineering Committee"(June 1992) recommended the *"development of a variety of contaminant release tests rather than focusing on mimicking a single scenario."* The report further states that U.S. EPA should *"use a variety of contaminant release (leaching) tests and test conditions which incorporate adequate understanding of the important parameters that effect leaching in order to assess the potential release of contaminants from sources of concern."*

The Science Advisory Board of the United States Environmental Protection Agency (U.S. EPA) in an unapproved working draft dated January 11, 1999, of a letter addressed to Carol M. Browner, USEPA, state, *"The current state of the science supports, even encourages, the development and use of different leach tests for different applications. To be most scientifically supportable, a leaching protocol should be both accurate and reasonably related to conditions governing leachability under actual waste disposal conditions."*

In light of the recent court decisions, USEPA has also begun to hold public meetings to gain input about possible problems with TCLP. A meeting was held on July 22 and 23, 1999 in Arlington, Va.. Mr. Robert Tonetti, Chief of the International and Special Projects Branch of EPA's Office of Solid Waste, said on July 23 that some problems with the Agency's prescribed

approach to waste leaching testing could require only simple fixes, but others could force EPA to completely reinvent its waste identification program under RCRA.[1]

In addition to the inappropriate mismanagement scenario prescribed by TCLP, the particle size reduction required by TCLP may not represent true field conditions. The TCLP requires that solids must be reduced in size to pass a 9.5 mm sieve before the waste is mixed with the extraction fluid. This reduction in size increases the specific surface area of the particles, which increases the leaching potential. Monolithic wastes have a lower leaching potential due to physical stabilization and the resultant increase in the length of diffusion pathway from waste into the leachate.[2] *Leachability Phenomena* recommended that low strength wastes should be milled. Moderate strength wastes should be tested sequentially as they are gradually reduced in particle size. High strength waste could be agitated "as is". In addition, the commentary asserted that wastes agitated "as is" will break up leaving only stronger portions intact.[3] This "as is" agitation more accurately represents the conditions in which the slag exists. Slag is a high strength material and would not under normal conditions be crushed to less than a 9.5 mm size. Any leach test should be applied to the materials in an "as is" state if the material is of high strength and the end use does not involve crushing.

The slag as it sits does not pose a significant threat to human health and the environment as evidenced by groundwater sample results. Groundwater sampling began at Chemetco in the 1980's, and has consistently been sampled on a quarterly basis since 1993. Results of an extensive groundwater evaluation demonstrates that there has been no impact to the regional aquifer from this facility for any metals associated with the slag pile.

If end uses of the slag involve disposal and the nature of the end use is known, Chemetco would suggest that the Synthetic Precipitation Leaching Procedure be utilized as an alternative leach test to the TCLP since TCLP "bears no rational relationship" to the slag. The Synthetic Precipitation Leaching Procedure (SPLP), EPA Method 1312, is more appropriate to assess the potential leachability of metals from materials not in municipal waste landfills. The SPLP predicts the effect of acid rain leaching through the material being tested. The SPLP test procedure is identical to the TCLP test procedure with a similar pH value except that different leaching fluids are used which more accurately reflect natural conditions.

SPLP is a method which USEPA has used to support its own regulations. The USEPA has proposed based on an evaluation which utilized SPLP data to allow disposal of Lead-Based Paint (LBP) debris in Construction and Demolition (C&D) Landfills. Modeling and a

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[1]Jacobs, Judith. "Problems with RCRA Testing Protocol May Warrant Broader changes, Official Says", Environmental Reporter by the Bureau of National Affairs, pg. 702, Vol. 30, No. 14, (8/6/99).

[2]Identification and Listing of Hazardous Waste, 51 Fed. Reg.21656-57 (1986).

[3]Leachability Phenomena, EPA-SAB-EEC-92-003, p 14(October 1991).

groundwater pathway analysis were conducted. Pursuant to the Proposed Rule for Management and Disposal of Lead-Based Paint Debris dated 12/18/98, "These modeling results (in combination with the TCLP and SPLP data for LBP debris and the general geochemical behavior of lead in the subsurface environment) were convincing factors leading the Agency to propose a rule allowing disposal of LBP debris in C&D landfills. EPA believes that such disposal would, in general, be a safe, effective, and reliable option for management of LBP debris."

USEPA was on-site in May of 1998 to collect samples of various materials and wastes at Chemetco. The facility split samples for a few of the materials. The split samples of slag taken during the May 1998 USEPA sampling event were analyzed using the SPLP method. The analytical results supplied by USEPA for the TCLP analysis and the corresponding SPLP analytical results are included below:

when? 3007 actual

Sample No.	Pb TCLP (mg/L)	Pb SPLP (mg/L)
SL-001	18.4	0.894
SL-002	16.6	1.04
SL-003	11.8	0.550
SL-004	15.4	2.28
SL-005	20.5	1.59
SL-006	39.2	1.39
SL-007	56.6	1.62
SL-008	14.6	1.51
SL-009	79.9	2.07
SL-010	27.7	1.18
SL-011	54.4	1.61
SL-012	17.2	0.556
SL-013	43.9	1.88
SL-014	50.6	1.45
SL-015	56.0	1.19
SL-016	21.0	0.440
SL-017	38.2	1.25
SL-018	67.7	3.01
SL-019	37.8	0.869
SL-020	17.0	0.751

It should be noted that a majority of the 20 samples were of the finer fraction of the slag residing in the pile in the northeast corner of the facility. Therefore, the samples are in no way representative of the slag pile as a whole.

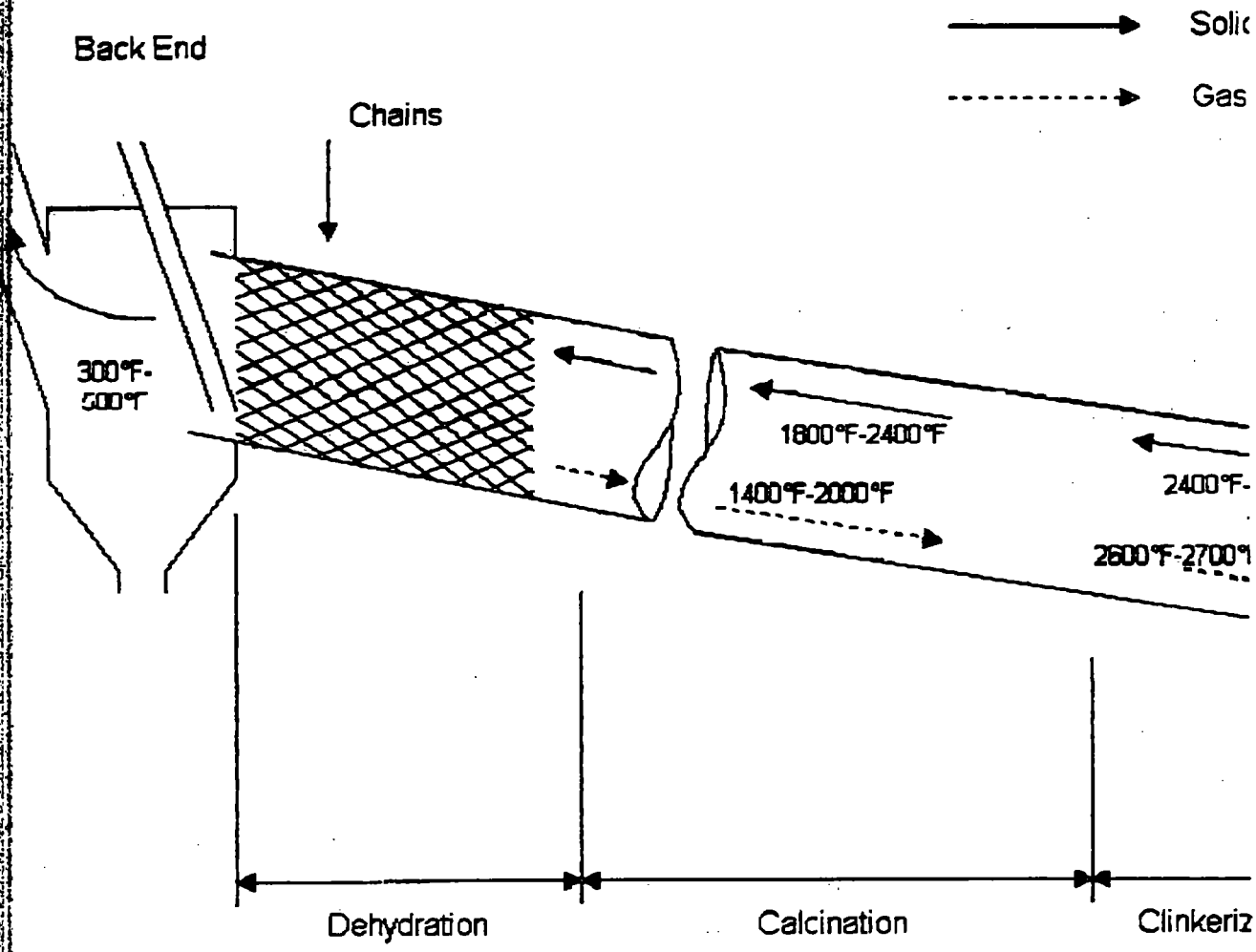
Chemetco is currently working closely with one of three major cement producer for the acceptance of our slag as one of their raw materials. The cement producer already utilizes a variety of other slags as raw material and would be able to utilize all of the slag. Attached is an example of the process taken from Continental Cement Company's web page. Raw materials are ground with water into a slurry which is fed into a kiln. During the process of forming Portland cement clinker, several chemical reactions occur and tremendous temperatures are experienced by the materials. The Portland cement is then sent to various concrete companies. These concrete companies use the cement to make concrete. The Portland cement would no longer contain slag in its present physical state.

[redacted]

Continental Cement Company, LLC

The Cement Manufacturing Process

Raw materials such as limestone, clay, silica and iron ore, etc. are ground with water to make a slurry and fed in specific proportions into the back end of Continental's kiln. This material travels downward toward the hot end of the kiln as the kiln turns approximately one revolution per minute. Initially, these raw materials give off water vapor (dehydration) and then give off CO2 (calcination). Finally, in the hottest section of the kiln near the tip of the flame, the final chemical reactions occur and the material falls out of the kiln into a cooler where it is air quenched.



Schematic Flow Diagram of a
Straight Rotary Cement Kiln

There are four major chemical components that make up the clinker that exits the kiln. They are known with their short hand notations below. The various types of Portland cement generally require different proportions of these four major components. This is largely done by controlling the proportions of raw materials entering the kiln.

Major Components of Portland Cement Clinker

- Tricalcium Silicate: 3CaO SiO2 (Alite, C3S)
- Dicalcium Silicate: 2CaO SiO2 (Belite, C2S)
- Tricalcium Aluminate: 3CaO Al2O3 (C3A)
- Tetracalcium Aluminoferrite: 4CaO Al2O 3 Fe2O3 (C4AF)

Major Steps in Clinkering

1. Decarbonation of Calcite (Calcination)

$$CaCO3 \longrightarrow CaO + CO2 \ @900C$$

(Highly Endothermic)

2. Rapid neutralization of free lime (exothermic)

$$3CaO + Al2O3 \longrightarrow C3A$$

| Melt (>1230C)

$$2CaO + Fe2O3 \longrightarrow C2F$$

$$2CaO + SiO2 \longrightarrow C2S \text{ (Belite)}$$

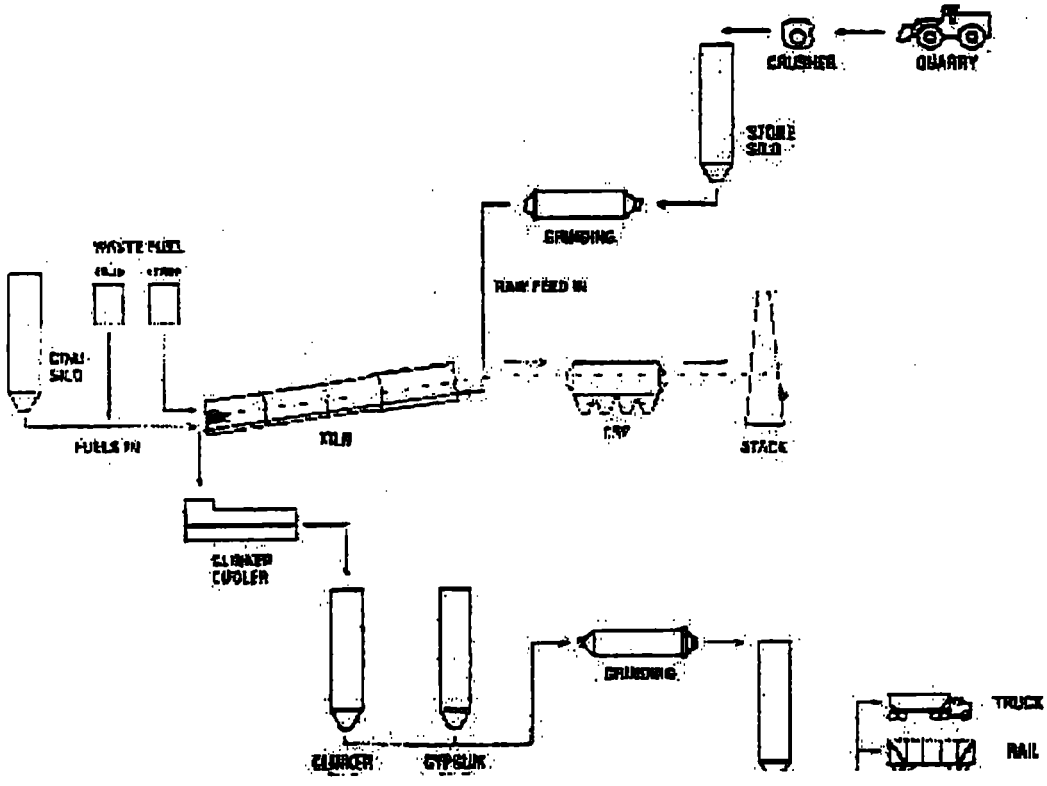
3. Formation of alite (slow reaction)

$$CaO + C2S \longrightarrow C3S \text{ (Alite)}$$

(>1200C)

4. Quenching (Cooling)

The above steps are the chemical reactions which occur during the process of forming Portland cement clinker. The presence of oxidizing conditions during these clinker forming reaction steps is critical to the production of Portland cement.



Cement plant process flow from quarry to product shipment.

SCENARIO

	I	II	III	IV	V	VI	VII	VIII
Years utilized in model	1994-1998	1994-1998	1994-1998	1994-1998	1994-1998	1994-1998	1994-1998	1994-1998
Cost of pollution control equipment to be incurred in the year 2000	$ 0	$ 0	$100,000	$100,000	$200,000	$200,000	$300,000	$300,000
Annual operating costs to be incurred relating to pollution control equipment	$ 0	$ 0	$100,000	$100,000	$200,000	$200,000	$300,000	$300,000
Weighted average smoothing constant	.3	.7	.3	.7	.3	.7	.3	.7
Penalty amount.....	$691,000	$ 0	$360,000	$ 0	$ 29,000	$ 0	$ 0	$ 0

Data Summary

In Thousands

I

[redacted]CHEMETCO, INC.
C Corporation, Tax Form 1120

[redacted] Description: 1994-98 data; $0;$0 costs; std

	1997	1996	1995	1994	1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
[redacted]empt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
[redacted]Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $0;$0 costs; std

Investment or Penalty Payment Year:	~~1999~~ 2000		
		Amount	Year
Lump-Sum Settlement Penalty:	$	0	
Depreciable Capital Cost	$	0	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:			
Non-Depreciable, Tax-Deductable One-Time Costs:			
Annual Costs:	$	0	~~1999~~ 2000

Data Summary

In Thousands

II

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $0;$0 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $0;$0 costs; .7

		Amount	Year
Investment or Penalty Payment Year:	2000 ~~1999~~		
Lump-Sum Settlement Penalty:		$ 0	
Depreciable Capital Cost		$ 0	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:			
Non-Depreciable, Tax-Deductable One-Time Costs:			
Annual Costs:		$ 0	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $0;$0 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
ss Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

*May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable assets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

**Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $0;$0 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69

Debt to Equity **3.15** **2.91** **3.50** **5.49** **8.05**

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio **0.50** **0.44** **0.48** **0.68** **1.11**

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned **-10.98** **-2.06** **10.03** **304.12** **na**

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio **-0.01** **0.06** **0.11** **0.43** **0.16**

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score **3.97** **6.02** **6.09** **9.12** **7.69**

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

Ability to Pay Analysis

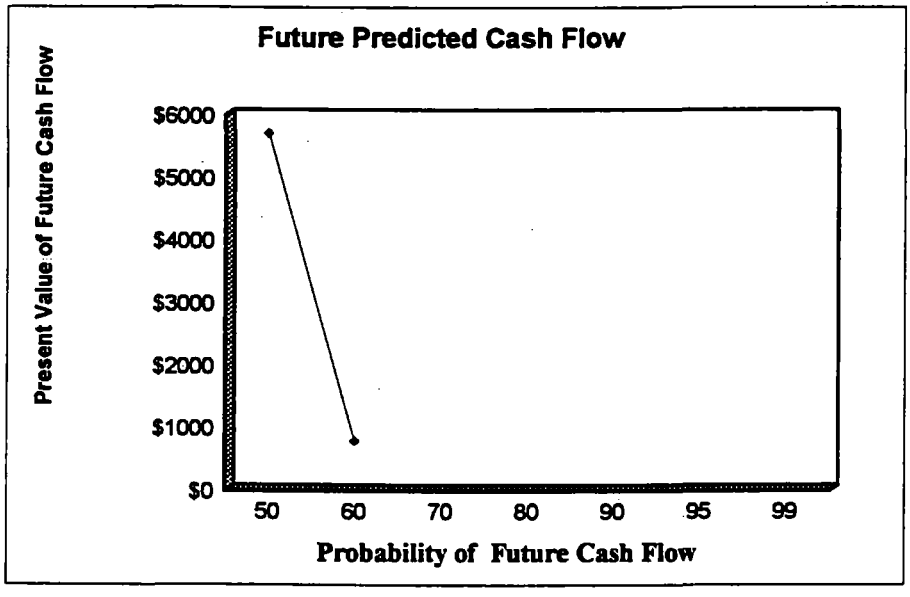
In Thousands of 1999 dollars

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $0;$0 costs; .7 Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.7
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	5,730	0	0	0	5,730
60%	800	0	0	0	800
70%	0	0	0	0	0
80%	0	0	0	0	0
90%	0	0	0	0	0
95%	0	0	0	0	0
99%	0	0	0	0	0



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $0 after meeting total Pollution Control Expenditures of $0.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.

ABEL's calculations indicate that while CHEMETCO, INC. will be able to generate funds over the next five years, there is less than 70 percent certainty that those funds will be sufficient to cover the proposed environmental expenditures.

[redacted] should review all of your tax form data inputs. If these inputs are correct, then you or a financial analyst should review the [redacted]s tax returns and other financial information to determine if nonessential expenses or assets, or additional debt capacity are available to support these payments. You may also wish to investigate other firms related by common ownership or officers. If no other sources of funds exist, you can consider reducing the civil penalty.

Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of areas to examine for sources of additi

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.

Corporation, Tax Form 1120

Description: 1994-98 data; $0;$0 costs; .7 Penalty Amount: $0

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to the litigation team to determine an appropriate cutoff.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

02/03/2000

Data Summary

In Thousands

III

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $100;$100 costs; std

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $100;$100 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
ss Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable ssets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $100;$100 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69
Debt to Equity	**3.15**	**2.91**	**3.50**	**5.49**	**8.05**

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio	**0.50**	**0.44**	**0.48**	**0.68**	**1.11**

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned	**-10.98**	**-2.06**	**10.03**	**304.12**	**na**

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio	**-0.01**	**0.06**	**0.11**	**0.43**	**0.16**

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score	**3.97**	**6.02**	**6.09**	**9.12**	**7.69**

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

02/03/2000

Ability to Pay Analysis

In Thousands of 1999 dollars

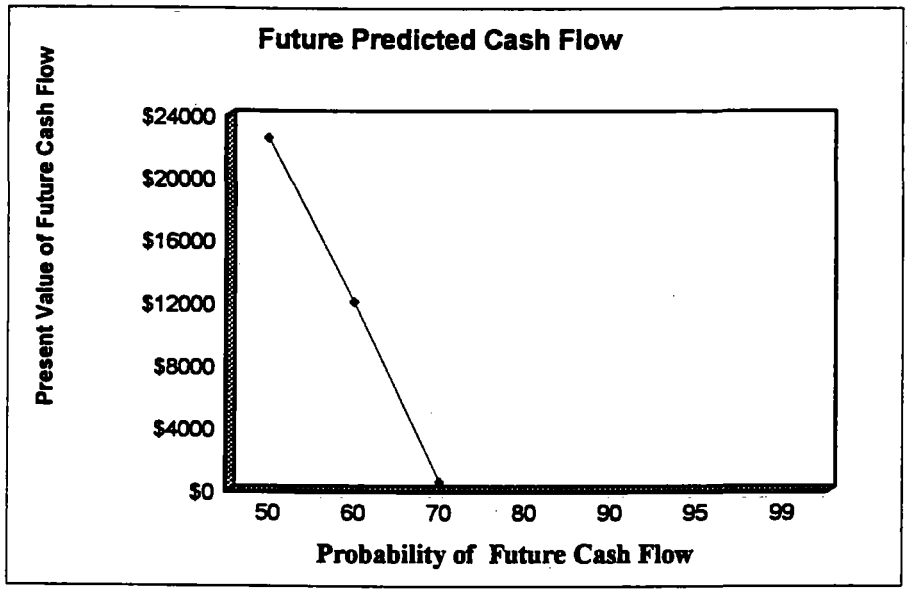
CHEMETCO, INC.
Corporation, Tax Form 1120
Description: 1994-98 data; $100;$100 costs; std

Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.3
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	22,715	0	75	256	22,383
60%	12,225	0	75	256	11,894
70%	691	0	75	256	360
80%	0	0	75	256	-331
90%	0	0	75	256	-331
95%	0	0	75	256	-331
99%	0	0	75	256	-331



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $360 after meeting total Pollution Control Expenditures of $331.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.
During the input phase, you requested to have the payment spread over 3 years. A lump-sum payment of $691 is equal to 3 annual payments of $269.

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to litigation team to determine an appropriate cutoff.

Based on the tax form data provided to ABEL, the most recent year's pre-tax cash flow for CHEMETCO, INC. is significantly worse than its inflation-adjusted historic average. If this poor cash flow were to continue in the future, then the ABEL predictions of available cash flow are overly optimistic. Therefore, ABEL recommends that when you have completed reviewing these

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.
[redacted] Corporation, Tax Form 1120
[redacted]n Description: 1994-98 data; $100;$100 costs; std Penalty Amount: $0

results, you re-run the analysis using a smoothing constant of 0.7 (see model default values screen in input phase). This larger smoothing constant will weight the most recent year's cash flow more heavily than those of other years' in the ABEL cash flow calculation.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

02/03/2000

Data Summary

In Thousands

IV

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $100;$100 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $100;$100 costs; .7

Investment or Penalty Payment Year: 2000 ~~1999~~

	Amount	Year
Lump-Sum Settlement Penalty:	$ 0	
Depreciable Capital Cost	$ 100	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:		
Non-Depreciable, Tax-Deductable One-Time Costs:		
Annual Costs:	$ 100	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $100;$100 costs; .7

	1997	1996	1995	1994	1993
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
Gross Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

* May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable assets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

** Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $100;$100 costs; .7

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69

Debt to Equity 3.15 2.91 3.50 5.49 8.05

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio 0.50 0.44 0.48 0.68 1.11

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned -10.98 -2.06 10.03 304.12 na

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio -0.01 0.06 0.11 0.43 0.16

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score 3.97 6.02 6.09 9.12 7.69

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

Ability to Pay Analysis

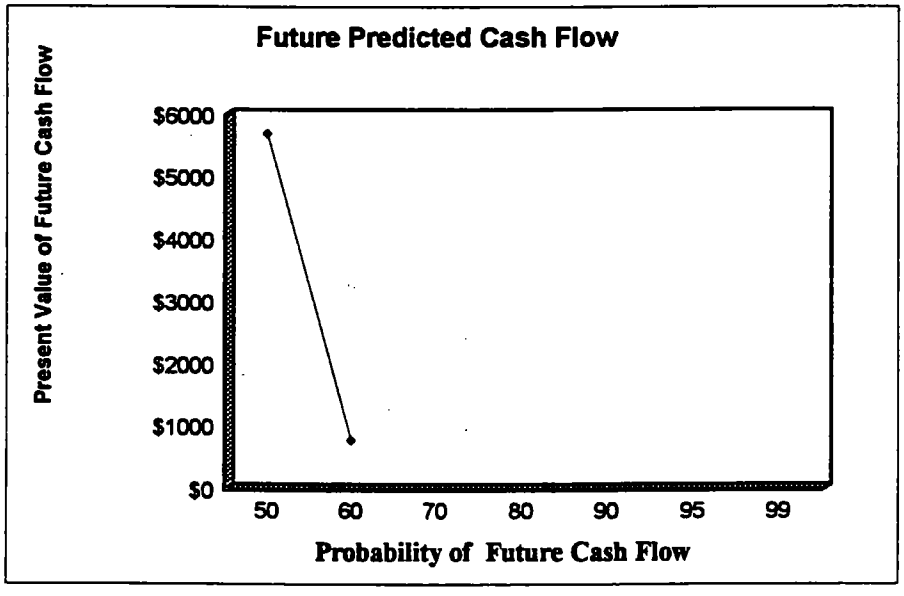
In Thousands of 1999 dollars

CHEMETCO, INC.
Corporation, Tax Form 1120
Description: 1994-98 data; $100;$100 costs; .7 Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.7
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	5,730	0	75	256	5,399
60%	800	0	75	256	469
70%	0	0	75	256	-331
80%	0	0	75	256	-331
90%	0	0	75	256	-331
95%	0	0	75	256	-331
99%	0	0	75	256	-331



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $-331 after meeting total Pollution Control Expenditures of $331.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.

ABEL's calculations indicate that while CHEMETCO, INC. will be able to generate funds over the next five years, there is less than 70 percent certainty that those funds will be sufficient to cover the proposed environmental expenditures.

should review all of your tax form data inputs. If these inputs are correct, then you or a financial analyst should review the 's tax returns and other financial information to determine if nonessential expenses or assets, or additional debt capacity are available to support these payments. You may also wish to investigate other firms related by common ownership or officers. If no other sources of funds exist, you can consider reducing the civil penalty.

Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of areas to examine for sources of additi

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.
[redacted]Corporation, Tax Form 1120
[redacted]n Description: 1994-98 data; $100;$100 costs; .7 Penalty Amount: $0

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to the litigation team to determine an appropriate cutoff.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

02/03/2000

Data Summary

In Thousands

V

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $200;$200 costs; std

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $200;$200 costs; std

Investment or Penalty Payment Year:	~~1999~~ 2000		
		Amount	Year
Lump-Sum Settlement Penalty:		$ 0	
Depreciable Capital Cost		$ 200	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:			
Non-Depreciable, Tax-Deductable One-Time Costs:			
Annual Costs:		$ 200	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.

Corporation, Tax Form 1120

Description: 1994-98 data; $200;$200 costs; std

	1998	1997	1996	1995	1994
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
Gross Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

* May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable assets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

** Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $200;$200 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69

Debt to Equity 3.15 2.91 3.50 5.49 8.05

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio 0.50 0.44 0.48 0.68 1.11

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned -10.98 -2.06 10.03 304.12 na

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio -0.01 0.06 0.11 0.43 0.16

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score 3.97 6.02 6.09 9.12 7.69

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

02/03/2000

Ability to Pay Analysis

In Thousands of 1999 dollars

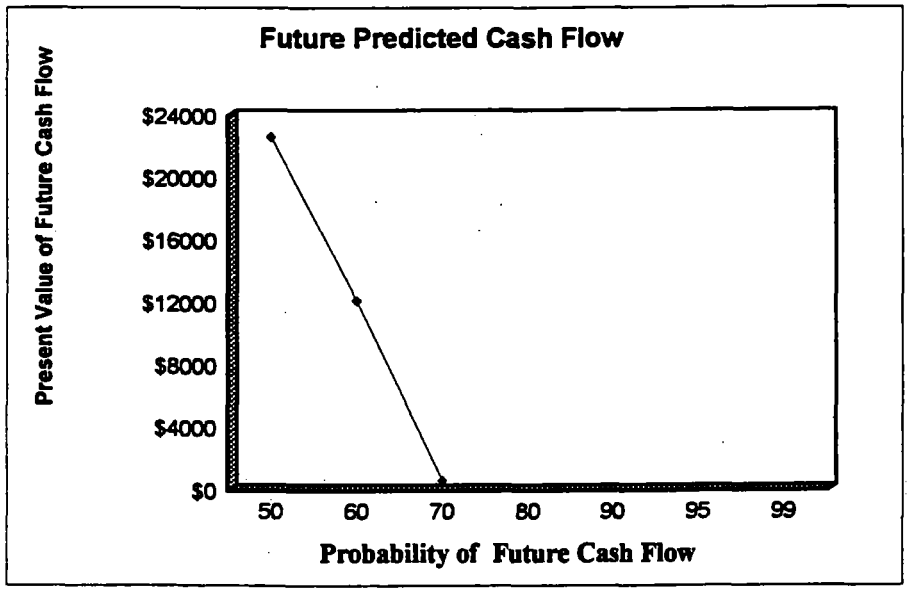
CHEMETCO, INC.
[redacted]orporation, Tax Form 1120
[redacted] Description: 1994-98 data; $200;$200 costs; std

Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.3
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	22,715	0	151	512	22,052
60%	12,225	0	151	512	11,563
70%	691	0	151	512	29
80%	0	0	151	512	-663
90%	0	0	151	512	-663
95%	0	0	151	512	-663
99%	0	0	151	512	-663



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $29 after meeting total Pollution Control Expenditures of $662.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.
During the input phase, you requested to have the payment spread over 3 years. A lump-sum payment of $691 is equal to 3 annual payments of $269.

[redacted]A employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to [redacted] litigation team to determine an appropriate cutoff.

Based on the tax form data provided to ABEL, the most recent year's pre-tax cash flow for CHEMETCO, INC. is significantly worse than its inflation-adjusted historic average. If this poor cash flow were to continue in the future, then the ABEL predictions of available cash flow are overly optimistic. Therefore, ABEL recommends that when you have completed reviewing these

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.
[redacted]orporation, Tax Form 1120
[redacted]n Description: 1994-98 data; $200;$200 costs; std Penalty Amount: $0

results, you re-run the analysis using a smoothing constant of 0.7 (see model default values screen in input phase). This larger smoothing constant will weight the most recent year's cash flow more heavily than those of other years' in the ABEL cash flow calculation.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

Data Summary

In Thousands

VI

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $200;$200 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $200;$200 costs; .7

Investment or Penalty Payment Year: ~~1999~~ 2000

	Amount	Year
Lump-Sum Settlement Penalty:	$ 0	
Depreciable Capital Cost	$ 200	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:		
Non-Depreciable, Tax-Deductable One-Time Costs:		
Annual Costs:	$ 200	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $200;$200 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
oss Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable assets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $200;$200 costs; .7

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69
Debt to Equity	**3.15**	**2.91**	**3.50**	**5.49**	**8.05**

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio	**0.50**	**0.44**	**0.48**	**0.68**	**1.11**

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned	**-10.98**	**-2.06**	**10.03**	**304.12**	**na**

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio	**-0.01**	**0.06**	**0.11**	**0.43**	**0.16**

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score	**3.97**	**6.02**	**6.09**	**9.12**	**7.69**

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

Ability to Pay Analysis

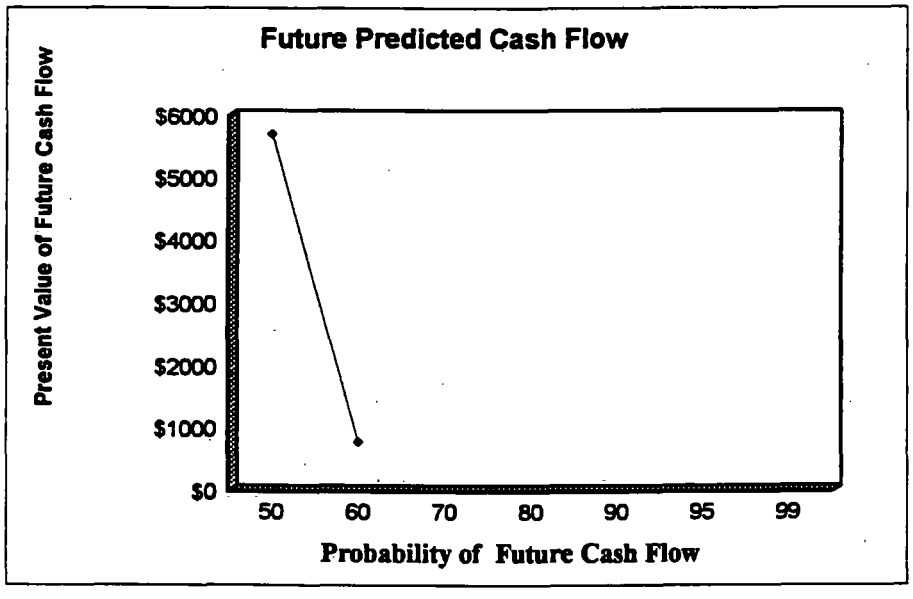
In Thousands of 1999 dollars

CHEMETCO, INC.
Corporation, Tax Form 1120
Description: 1994-98 data; $200;$200 costs; .7 Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.7
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	5,730	0	151	512	5,067
60%	800	0	151	512	138
70%	0	0	151	512	-663
80%	0	0	151	512	-663
90%	0	0	151	512	-663
95%	0	0	151	512	-663
99%	0	0	151	512	-663



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $-663 after meeting total Pollution Control Expenditures of $662.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.

ABEL's calculations indicate that while CHEMETCO, INC. will be able to generate funds over the next five years, there is less than 70 percent certainty that those funds will be sufficient to cover the proposed environmental expenditures.

should review all of your tax form data inputs. If these inputs are correct, then you or a financial analyst should review the s tax returns and other financial information to determine if nonessential expenses or assets, or additional debt capacity are available to support these payments. You may also wish to investigate other firms related by common ownership or officers. If no other sources of funds exist, you can consider reducing the civil penalty.

Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of areas to examine for sources of additi

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.
Corporation, Tax Form 1120
n Description: 1994-98 data; $200;$200 costs; .7 Penalty Amount: $0

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to the litigation team to determine an appropriate cutoff.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

Data Summary

In Thousands

VII

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $300;$300 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $300;$300 costs; std

		Amount	Year
Investment or Penalty Payment Year:			~~1999~~ 2000
Lump-Sum Settlement Penalty:	$	0	
Depreciable Capital Cost	$	300	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:			
Non-Depreciable, Tax-Deductable One-Time Costs:			
Annual Costs:	$	300	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $300;$300 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Balance Sheet					
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Statement					
ss Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Summary of Estimated Cash Flow					
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

*May include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable assets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

**Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $300;$300 costs; std

	1997 (8)	1996 (7)	1995 (6)	1994 (5)	1993 (4)
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69

Debt to Equity — **3.15** | **2.91** | **3.50** | **5.49** | **8.05**

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio — **0.50** | **0.44** | **0.48** | **0.68** | **1.11**

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned — **-10.98** | **-2.06** | **10.03** | **304.12** | **na**

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio — **-0.01** | **0.06** | **0.11** | **0.43** | **0.16**

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score — **3.97** | **6.02** | **6.09** | **9.12** | **7.69**

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

02/03/2000

Ability to Pay Analysis

In Thousands of 1999 dollars

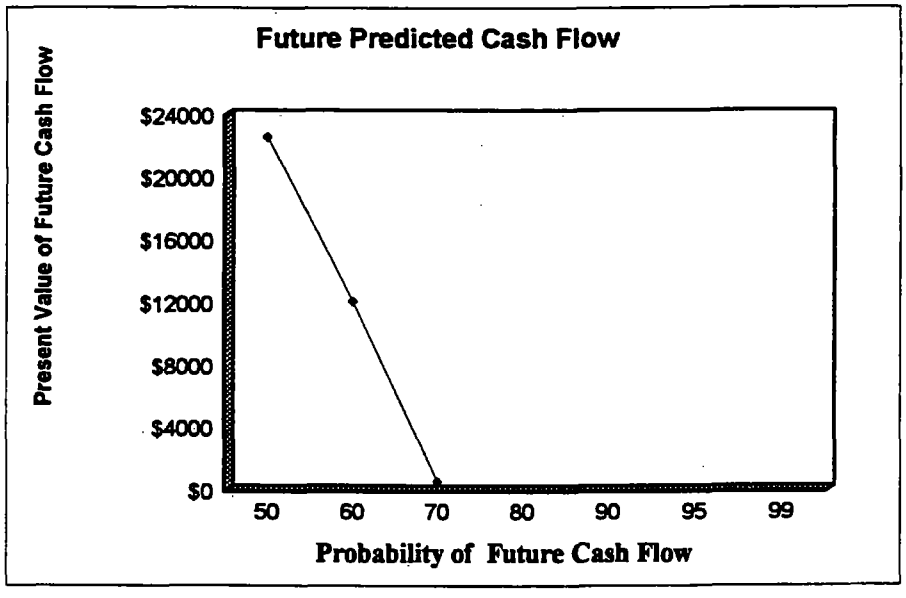
CHEMETCO, INC.
Corporation, Tax Form 1120
Description: 1994-98 data; $300;$300 costs; std

Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.3
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	22,715	0	226	768	21,721
60%	12,225	0	226	768	11,232
70%	691	0	226	768	-303
80%	0	0	226	768	-994
90%	0	0	226	768	-994
95%	0	0	226	768	-994
99%	0	0	226	768	-994



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $-303 after meeting total Pollution Control Expenditures of $993.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.
During the input phase, you requested to have the payment spread over 3 years. A lump-sum payment of $691 is equal to 3 annual payments of $269.

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to litigation team to determine an appropriate cutoff.

Based on the tax form data provided to ABEL, the most recent year's pre-tax cash flow for CHEMETCO, INC. is significantly worse than its inflation-adjusted historic average. If this poor cash flow were to continue in the future, then the ABEL predictions of available cash flow are overly optimistic. Therefore, ABEL recommends that when you have completed reviewing these

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.
Corporation, Tax Form 1120
n Description: 1994-98 data; $300;$300 costs; std Penalty Amount: $0

results, you re-run the analysis using a smoothing constant of 0.7 (see model default values screen in input phase). This larger smoothing constant will weight the most recent year's cash flow more heavily than those of other years' in the ABEL cash flow calculation.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.

Data Summary

In Thousands

VIII

CHEMETCO, INC.
C Corporation, Tax Form 1120

Description: 1994-98 data; $300;$300 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Gross Receipts or Sales Less Returns and Allowances	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold and/or Operations	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion	$ 0	$ 0	$ 0	$ 0	$ 0
Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Taxable Income Before NOL and Special Deductions	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
NOL Deductions	$ 0	$ 0	$ 7	$ 6	$ 1,913
Special Deductions	$ 8	$ 51	$ 42	$ 2	$ 0
Total Tax	$ 0	$ 0	$ 698	$ 6,989	$ 548
Credit From Regulated Investment Companies	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Tax on Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Trade Notes and Accounts Receivable Less Bad Debts	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Notes, Bonds Payable in Less Than One Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Notes, Bonds Payable in One Year or More	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Appropriated Retained Earnings	$ 0	$ 0	$ 0	$ 0	$ 0
Unappropriated Retained Earnings	$ 10,087	$ 12,528	$ 10,906	$ 6,617	$ 3,366
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Income Recorded on Books not Included in Return	$ 129	$ 131	$ 0	$ 92	$ 388

02/03/2000

Environmental Expenditures Summary

CHEMETCO, INC.
C Corporation, Tax Form 1120

Run Description: 1994-98 data; $300;$300 costs; .7

Investment or Penalty Payment Year: ~~1999~~ 2000

	Amount	Year
Lump-Sum Settlement Penalty:	$ 0	
Depreciable Capital Cost	$ 300	~~1999~~ 2000
Non-Depreciable, Non-Tax-Deductable Capital Costs:		
Non-Depreciable, Tax-Deductable One-Time Costs:		
Annual Costs:	$ 300	~~1999~~ 2000

Financial Profile

In Thousands

CHEMETCO, INC.

C Corporation, Tax Form 1120

Description: 1994-98 data; $300;$300 costs; .7

	1998	1997	1996	1995	1994
			Balance Sheet		
Assets					
Cash	$ 0	$ 1,705	$ 443	$ 3,815	$ 5,088
Accounts Receivable	$ 4,683	$ 3,174	$ 3,599	$ 4,346	$ 3,877
Inventories	$ 9,987	$ 9,644	$ 9,556	$ 8,968	$ 11,285
U.S. Government Obligations	$ 0	$ 0	$ 0	$ 0	$ 0
Tax-Exempt Securities	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Assets	$ 1,386	$ 716	$ 372	$ 3,101	$ 1,161
All Other Assets*	$ 26,341	$ 34,283	$ 35,679	$ 23,017	$ 9,492
Total Assets	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
Liabilities					
Accounts Payable	$ 13,509	$ 15,714	$ 20,591	$ 21,957	$ 16,498
Mortgages, Bonds Payable in < 1 Year	$ 0	$ 0	$ 1,278	$ 0	$ 0
Other Current Liabilities	$ 18,676	$ 19,312	$ 6,952	$ 7,674	$ 2,716
Loans from Stockholders	$ 0	$ 0	$ 0	$ 0	$ 0
Mortgages, Bonds Payable in > 1 Year	$ 0	$ 1,843	$ 2,922	$ 0	$ 1,323
Other Liabilities	$ 0	$ 0	$ 6,875	$ 6,950	$ 6,950
Total Liabilities	$ 32,185	$ 36,869	$ 38,618	$ 36,581	$ 27,487
Stockholders' Equity	$ 10,212	$ 12,653	$ 11,031	$ 6,666	$ 3,416
Total Liabilities and Stockholders' Equity	$ 42,397	$ 49,522	$ 49,649	$ 43,247	$ 30,903
			Income Statement		
ss Sales	$ 182,251	$ 301,998	$ 291,124	$ 328,520	$ 223,218
Cost of Goods Sold	$ 172,284	$ 282,972	$ 272,189	$ 273,296	$ 203,245
Operating Profit	$ 9,967	$ 19,026	$ 18,935	$ 55,224	$ 19,973
Other Expenses and Income					
Interest Expense	$ 476	$ 1,077	$ 233	$ 68	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Other Expenses (Income)**	$ 9,699	$ 15,809	$ 13,678	$ 32,656	$ 15,356
Total Expenses (Income)	$ 15,665	$ 22,315	$ 16,832	$ 34,612	$ 17,173
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
			Summary of Estimated Cash Flow		
Taxable Income Before NOL	$ (5,698)	$ (3,289)	$ 2,103	$ 20,612	$ 2,800
Tax	$ 0	$ 0	$ (698)	$ (6,989)	$ (548)
Credit for Regulated Investment	$ 0	$ 0	$ 0	$ 0	$ 0
Credit for Federal Fuels	$ 0	$ 0	$ 0	$ 0	$ 0
Depreciation	$ 2,862	$ 2,796	$ 2,321	$ 1,888	$ 1,817
Depletion and Amortization	$ 2,628	$ 2,633	$ 600	$ 0	$ 0
Income Not Included on Return	$ 129	$ 131	$ 0	$ 92	$ 388
Available After-Tax Cash Flow	$ (79)	$ 2,271	$ 4,326	$ 15,603	$ 4,457
Available Pre-Tax Cash Flow	$ (79)	$ 2,271	$ 5,024	$ 22,592	$ 5,005
Adjusted for Inflation	$ (84)	$ 2,489	$ 5,677	$ 26,318	$ 6,011

* ay include loans to stockholders, mortgage and real estate loans, other investments, buildings and other depreciable assets, depletable sets, land, intangible assets, and other long-term assets; see Schedule L of firm's federal income tax return.

** Includes additional income categories listed on page 1, Income Section, of firms's federal income tax return and additional expense categories listed on page 1, Deductions Section, of firms's federal income tax return.

Financial Profile

In Thousands

CHEMETCO, INC.
C Corporation, Tax Form 1120
Description: 1994-98 data; $300;$300 costs; .7

	8 1997	7 1996	6 1995	5 1994	4 1993
Historical Financial Ratios					
Debt to Equity	3.15	2.91	3.50	5.49	8.05
Current Ratio	0.50	0.44	0.48	0.68	1.11
Times Interest Earned	-10.98	-2.06	10.03	304.12	na
Beaver's Ratio	-0.01	0.06	0.11	0.43	0.16
Altman Z'- Scor	3.97	6.02	6.09	9.12	7.69

Debt to Equity **3.15** **2.91** **3.50** **5.49** **8.05**

The debt to equity ratio (D/E) is defined as the firm's total liabilities divided by its stockholders' equity. This ratio measures the degree to which debt constitutes the company's financing.
A D/E greater than 1.5 generally indicates that a firm may have difficulty borrowing additional capital. This firm's D/E fell into this category in 1997, 1996, 1995, 1994, 1993.

Current Ratio **0.50** **0.44** **0.48** **0.68** **1.11**

The current ratio (CR) is defined as the firm's current assets divided by its current liabilities. The ratio assesses whether the firm will be able to cover its short-term debts using cash and other current assets that can be easily liquidated.
A CR less than 1.0 indicates that the firm has serious liquidity problems. This firm's CR was poor in 1997, 1996, 1995, 1994.
A CR between 1.0 and 2.0 indicates that the firm may suffer from liquidity problems. This firm's CR was unfavorable in 1993.

Times Interest Earned **-10.98** **-2.06** **10.03** **304.12** **na**

The times interest earned ratio (TIE) is defined as the firm's earnings before interest and taxes divided by its interest expense payments. This ratio indicates how easily the firm can pay the interest expense on its debt.
A TIE less than 2.0 indicates that the firm may have trouble meeting future interest payments. As the TIE decreases, the likelihood of the firm experiencing problems in meeting those payments increases. This firm's TIE was unfavorable in 1997, 1996.
A TIE greater than 2.0 generally indicates that the firm is able to meet its interest payments. This firm fell into this category in 1995, 1994.
A TIE of 'na' indicates that the firm had no interest expense in 1993.

Beaver's Ratio **-0.01** **0.06** **0.11** **0.43** **0.16**

Beaver's ratio (BR) is defined as the firm's after-tax cash flow divided by its total liabilities. The BR provides a useful measure for predicting a firm's long-term solvency and likelihood of staying in business. In particular, the BR indicates whether the firm's internally generated cash flow is sufficient to meet its current and long-term financial obligations.
A BR less than 0.1 generally indicates poor financial health. This firm fell into this category in 1997, 1996.
A BR greater than 0.2 generally indicates that the firm is solvent and healthy. This firm fell into this category in 1994.
A BR between 0.1 and 0.2 is inconclusive. This situation applied to this firm in 1995, 1993.

Altman's Z- Score **3.97** **6.02** **6.09** **9.12** **7.69**

Altman's Z-Score (AZS) is calculated as a weighted average of several financial ratios. AZS is a predictor of firm failure. It is most accurate within two years prior to bankruptcy.
An AZS greater than 2.90 indicates that it is unlikely that the firm will be forced into bankruptcy during the coming two years. This firm's AZS fell into this category in 1997, 1996, 1995, 1994, 1993.

This firm's most recent year's financial ratios indicate that:

The firm has poor cash flow, poor liquidity, and may have difficulty obtaining additional debt financing. However, it is unlikely the firm will be forced into bankruptcy in the short-term.
Note that although these ratios provide a rough indication of the firm's financial condition, they can easily be misinterpreted. See ABEL User's Manual for a more detailed discussion of these issues.

02/03/2000

Ability to Pay Analysis

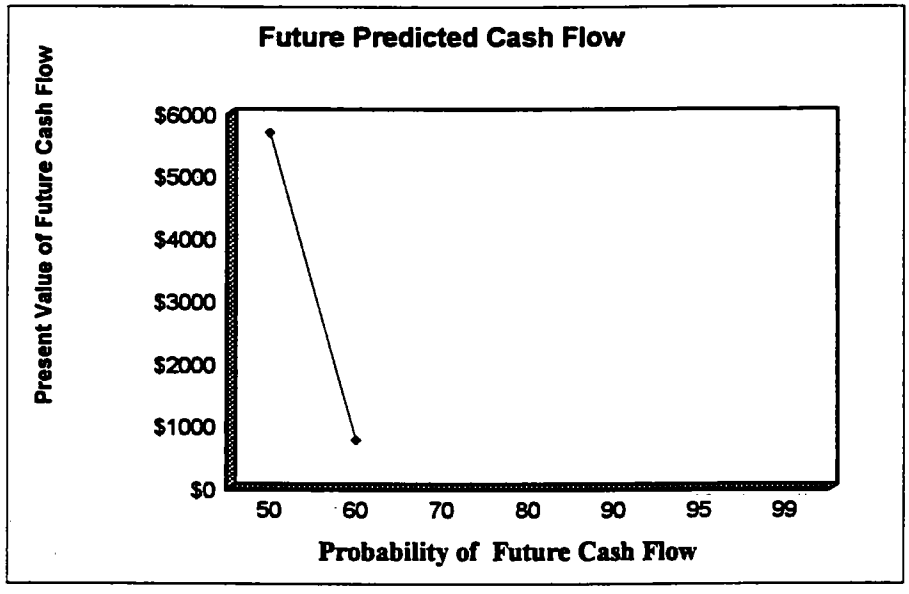
In Thousands of 1999 dollars

CHEMETCO, INC.
orporation, Tax Form 1120
Description: ' 1994-98 data; $300;$300 costs; .7 Penalty Amount: $0

Reinvestment Rate:	0.0
Marginal Income Tax Rate (%):	39.4
Annual Inflation Rate (%):	3.1
Discount Rate (%):	10.5
Weighted Average Smoothing Constant:	0.7
Number of Years of Future Cash Flow:	5
Penalty Payment Schedule:	3

Summary of Predicted Cash Flow

Probability of Cash Flow	Total Cash Flow Generated by Firm	Penalty Payment	Initial Pollution Control Expenditures	Present Value of Annual Pollution Control Costs	Firm Cash Flow Net of Environmental Expenditures
50%	5,730	0	226	768	4,736
60%	800	0	226	768	-194
70%	0	0	226	768	-994
80%	0	0	226	768	-994
90%	0	0	226	768	-994
95%	0	0	226	768	-994
99%	0	0	226	768	-994



Conclusions

ABEL estimates a 70 percent probability that CHEMETCO, INC. could afford to pay a penalty of $-994 after meeting total Pollution Control Expenditures of $993.

This estimation of ability to pay is based on funds the firm is expected to generate during the next 5 years.

ABEL's calculations indicate that while CHEMETCO, INC. will be able to generate funds over the next five years, there is less than 70 percent certainty that those funds will be sufficient to cover the proposed environmental expenditures.

should review all of your tax form data inputs. If these inputs are correct, then you or a financial analyst should review the 's tax returns and other financial information to determine if nonessential expenses or assets, or additional debt capacity are available to support these payments. You may also wish to investigate other firms related by common ownership or officers. If no other sources of funds exist, you can consider reducing the civil penalty.

Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of areas to examine for sources of additi

Ability to Pay Analysis

In Thousands of 1999 dollars

CHEMETCO, INC.

[redacted]orporation, Tax Form 1120

[redacted] Description: 1994-98 data; $300;$300 costs; .7 Penalty Amount: $0

EPA employs the 70 percent probability level as a common cutoff for determining ability to pay. Note, however, that it is ultimately up to the litigation team to determine an appropriate cutoff.

ABEL generally provides a conservative estimate of ability to pay. Click 'Help' on the 'Reports Generation' screen or consult the ABEL User's Manual for a discussion of ABEL's results and related issues.